# Qualification Specification:

## OCN NI Level 3 Extended Diploma in Agricultural Business

- **Qualification No:** 603/7399/4

**Version:** 2.0

# 1. Specification Updates

Key changes have been listed below:

| Section | Detail of change | Version and date of Issue |
|---|---|---|
| Specification | New format | V2.0 – November 2025 |
| | | |
| | | |

# 2. Contents

# 3. Introduction to Open College Network Northern Ireland (OCN NI)

The Open College Network Northern Ireland (OCN NI) is a UK recognised awarding organisation based in Northern Ireland. We are regulated by CCEA Regulation to develop and award regulated professional and technical (vocational) qualifications from Entry Level up to and including Level 5 across all sector areas. In addition, OCN NI is also regulated by Ofqual to award qualifications in England.

OCN NI is also an educational charity that advances education by developing nationally recognised qualifications and recognising the achievements of learners. We work with centres such as Further Education Colleges, Private Training Organisations, Voluntary & Community Organisations, Schools, SME's and Public Sector bodies to provide learners with opportunities to progress into further learning and/or employment. OCN NI's Strategic Plan can be found on the OCN NI website www.ocnni.org.uk.

For further information on OCN NI qualifications or to contact us, you can visit our website at www.ocnni.org.uk. The website should provide you with details about our qualifications, courses, contact information, and any other relevant information you may need.

## OCN NI Contact Details

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# 4. About this Specification

This specification details OCN NI's specific requirements for the delivery and assessment of the **OCN NI Level 3 Extended Diploma in Agricultural Business.**

This specification will provide guidelines for centres to ensure the effective and correct delivery of this qualification. OCN NI qualification specifications are based on research and engagement with the practitioner community to ensure they provide appropriate skills and knowledge for learners.

The qualification specification will detail the following aspects of the OCN NI Level 3 Extended Diploma in Agricultural Business.

- **Qualification Features**: this includes the key characteristics and features of this qualification, such as its intended audience, purpose, and credit value.

- **Centre Requirements:** this details the prerequisites and obligations that centres must fulfil to be eligible to deliver and assess this qualification. These include guidelines on staff qualifications, resources, and required procedures.

- **Structure and Content:** this details the structure and content of the qualification including units, and any specific content that learners will be required to study.

- **Assessment Requirements:** this details assessment criteria and assessment methods for this qualification, ensuring that summative assessment approaches are clear.

- **Quality Assurance:** the quality and consistency of delivery and assessment of this qualification are of paramount importance to OCN NI. The mandatory quality assurance arrangements including processes for internal and external quality assurance that all centres offering this qualification must adhere to are detailed.

- **Administration:** guidance on the administrative aspects of delivering this qualification, including registration, certification and record-keeping.

- Reference to other handbooks and policies as appropriate to the qualifications.

It is important to note that OCN NI will communicate any significant updates or changes to this specification in writing to our centres. Additionally, we will make these changes available on our official website at www.ocnni.org.uk.

To stay current, please refer to the online version of this specification as it is the most authoritative and up-to-date publication. Be aware that downloaded and printed copies may not reflect the latest revisions.

## 4.1 Additional Support

OCN NI offers a comprehensive range of support services designed to assist centres in meeting the delivery and quality assurance requirements of OCN NI qualifications. These services include:

- **Learner Assessment Booklets**: These booklets are created to assist learners in demonstrating the fulfilment of assessment criteria and organising the quality assurance prerequisites for each individual unit.

- **Specimen Assessment Materials**: These booklets are created to assist learners in demonstrating the fulfilment of assessment criteria and organising the quality assurance prerequisites for each individual unit.

- **Qualification Support Pack**: A support pack has been developed to support centres in the delivery of this qualification. The pack includes planning and assessment templates, guides to best practice, etc.

- **Professional Development for Educators**: OCN NI provides opportunities for professional development tailored to meet the various needs of practitioners and quality assurance staff. Centres can join our training sessions, available in both face-to-face and online formats, or explore a wealth of training materials by visiting www.ocnni.org.uk

- **OCN NI Subject Advisors**: Our team of subject advisors offers vital information and support to centres. They provide guidance on specification details, non-exam assessment advice, updates on resource developments, and various training opportunities. They actively engage with subject communities through an array of networks to facilitate the exchange of ideas and expertise, to support practitioners to provide quality education programs to learners.

All centres can access information, support and guidance to support the delivery and quality assurance of this qualification by contacting their designated Business Development Advisor or by contacting us on Contact Us | OCN NI

# 5. About this Qualification

## 5.1 Qualification Regulation Information

OCN NI Level 3 Extended Diploma in Agricultural Business
Qualification Number: 603/7399/4

Operational start date: 15 April 2021
Review date: 31 March 2031

The qualification's operational start and end dates define the regulated qualification's lifecycle. The operational end date is the final date for learner registration, while learners have until the certificate end date to complete the qualification and receive their certificates.

It is important to note that all OCN NI regulated qualifications are listed on the Register of Regulated Qualifications (RQF), which can be found at Ofqual Register. This register is maintained by Ofqual in England and CCEA Regulation in Northern Ireland. It contains information about qualifications that are regulated and accredited. It is a key resource for learners, employers, and educational institutions to verify the status and recognition of qualifications.

Centres must adhere to administrative guidelines diligently, with special attention to the fact that fees, registration, and certification end dates for the qualification may be subject to changes. It is a centre's responsibility to make itself aware of updates on any modifications to ensure compliance with the latest requirements. OCN NI provides centres with timely updates through various channels including website, newsletters and through this specification. Information on qualification fees can be found on the Centre Login section of the OCN NI website www.ocnni.org.uk .

## 5.2 Sector Subject Area

A subject sector area is a specific category used to classify academic and vocational qualifications. Subject sector areas are part of the educational and qualifications framework to organise and categorise qualifications. The sector subject for this qualification is:

**Subject Area: 3.1 Agriculture**

## 5.3 Grading

Grading for this qualification is pass/fail.

## 5.4 Qualification's Aim and Objectives

### Qualification's Aim

The aim of the OCN NI Level 3 Extended Diploma in Agricultural Business is to provide those undertaking the qualification with a comprehensive set of skills and knowledge, related to agriculture or commercial horticulture business management, while providing business benefits to those undertaking it.

### Qualification's Objectives

The objectives of the OCN NI Level 3 Extended Diploma in Agricultural Business are to provide learners with skills and knowledge in the following areas:

- managing and operating agriculture or commercial horticulture businesses and
- the qualification will provide learners with the underpinning knowledge, understanding and skills required to work in land-based industries

## 5.5 Target Learners

This qualification is targeted at individuals who currently are or intend to be employed in a range of agriculture or commercial horticulture related occupations and wish to gain a nationally recognised qualification in agricultural business at Level 3.

## 5.6 Entry Requirements

Applicants to the OCN NI Level 3 Extended Diploma in Agricultural Business course must meet **one** of the following entry criteria prior to enrolling and must be at least 16 years of age:-

I. Hold at least four GCSE qualifications (or equivalent) at Grade C or above and including English, Maths and Science

**Or**

II. Hold a Level 2 qualification* in Agriculture or Horticulture and GCSE qualifications (or equivalent) at Grade C or above in English and Maths

(*eligible Level 2 qualifications include Level 2 Technical Certificate in Agriculture/Horticulture, Level 2 Diploma in Agriculture/Horticulture, National Certificate in Agriculture/Horticulture, College Certificate in Agriculture/Horticulture, Level 2 Diploma in Work based Agriculture, Level 2 Apprenticeship in Agriculture, NVQ Level 2 in Livestock Production; NVQ Level 2 in Agriculture/Horticulture)

**Or**

III. Possess significant industry experience (at least 5 years working in farming or in commercial horticulture) and hold GCSE qualifications (or equivalent) at Grade C or above in English and Maths

(In Northern Ireland, equivalent qualifications to GCSE English and Maths are Essential Skills qualifications at Level 2 in Application of Number/Numeracy and Communication/Literacy).

## 5.7 Ensuring Health and Safety of Learners

Within the OCN NI Level 3 Extended Diploma in Agricultural Business the health, safety and security of learners are paramount. Every effort must be made by the centre and those involved in the delivery to ensure that learners operate in a safe and secure environment where risk of injury is minimum. Particular attention should be given to:

- ensuring learners are briefed about health, safety and security procedures including how to identify hazards and report accidents/injuries/dangerous occurrences
- ensuring learners understand the key legislative and best practice aspects of the agricultural industry
- ensuring necessary risk assessments are carried out
- ensuring appropriate levels of supervision are agreed and implemented prior to delivery
- ensuring learners are aware of the hazards of working with animals, farm/ horticultural equipment and slurry
- clear accident reporting procedures being in place
- machinery, tools and/or equipment to ensure they are in safe working order and learners are given proper instruction, training, protective clothing and supervision
- appropriate insurance arrangements being in place

## 5.8 Progression

The OCN NI Level 3 Extended Diploma in Agricultural Business will enable progression to higher level qualifications including degree level programmes in related areas and/or directly into relevant employment within land-based industries.

## 5.9 Delivery Language

This qualification is exclusively available in English. If there is a desire to offer this qualification in Welsh or Irish (Gaeilge), we encourage you to get in touch with OCN NI. They will assess the demand for such provisions and, if feasible, provide the qualification in the requested language as appropriate.

# 6. Centre Requirements for Delivering this Qualification

## 6.1 Centre Recognition

New and existing OCN NI recognised centres must apply for and be granted approval to deliver this qualification prior to the commencement of delivery.

## 6.2 Qualification Approval

Once a centre has successfully undergone the Centre Recognition process, it becomes eligible to apply for qualification approval. The centre's capability to meet and sustain the qualification criteria will be assessed. Throughout the qualification approval process, OCN NI will aim to ensure that:

- centres possess suitable physical resources (e.g., equipment, IT, learning materials, teaching rooms) to support qualification delivery and assessment
- centre staff involved in the assessment process have relevant expertise and/or occupational experience
- robust systems are in place for ensuring ongoing professional development for staff delivering the qualification
- centres have appropriate health and safety policies concerning learner equipment use
- qualification delivery by centres complies with current equality and diversity legislation and regulations
- as a part of the assessment process for this qualification it may be useful for learners to have access to a practical work setting

## 6.3 Centre Staffing

To offer this qualification centres are mandated to establish the following roles as a minimum, although a single staff member may serve in more than one capacity*:

- Centre contact
- Programme Co-ordinator
- Assessor
- Internal Quality Assurance (IQA)

*Note: An individual cannot serve as an IQA for their own assessments.

## 6.4 Tutor Requirements

Tutors responsible for delivering this qualification are expected to possess a high degree of occupational competency. They should meet the following criteria:

- **Occupational Competency:** Tutors should demonstrate a clear understanding of the subject matter, including up-to-date knowledge. They should also have a minimum of one year's direct or related relevant experience in agriculture. This competence should enable them to effectively impart knowledge and practical skills to learners.

- **Qualifications:** Tutors should have a minimum of an Honours degree or equivalent qualification in Agriculture, or Agricultural Technology, or Agricultural Economics and Management, or in a closely related subject.

  They must also have a minimum of 12 months relevant post qualification experience in agriculture. This ensures that they have the necessary academic foundation to provide in-depth guidance and support to learners.

These requirements collectively ensure that learners receive instruction from highly qualified and experienced instructors, thereby enhancing the quality and effectiveness of their educational experience.

## 6.5 Assessor Requirements

The assessment of this qualification takes place within the centre and is subjected to OCN NI's rigorous quality assurance procedures. The achievement of individual units is based on the criteria defined in each unit.

Assessors play a pivotal role in ensuring the validity and fairness of assessments. They are required to meet the following criteria:

- **Occupational Competency:** Assessors should possess a high degree of occupational competency in the relevant subject matter. This expertise enables them to accurately evaluate and measure a learner's knowledge and skills. Additionally, they should hold qualifications at a level that is at least one level higher than the qualification they are assessing, ensuring their in-depth understanding of the subject matter.

- **Assessment Expertise:** Assessors must have a minimum of an Honours degree or equivalent qualification in Agriculture, or Agricultural Technology, or Agricultural Economics and Management, or in a closely related subject.

  Assessors should have direct or related experience in the field of assessment. This includes knowledge of best practices in designing, conducting, and grading assessments. Their expertise ensures that assessments are both fair and valid.

- **Assessors Qualification:** Assessors should hold or be currently undertaking a recognised assessor's qualification; or must have attended the OCN NI Assessment Training.

- **Comprehensive Assessment Oversight:** Assessors are responsible for evaluating all assessment tasks and activities comprehensively. They must thoroughly review and assess each element to ensure a fair and accurate representation of a learner's skills and knowledge.

These rigorous requirements uphold the quality and integrity of the qualification's assessment process, ensuring that learners receive a fair and reliable evaluation of their competencies.

## 6.6 Internal Quality Assurer Requirements

The Internal Quality Assurer plays a crucial role in the centre's internal quality assurance processes. The centre must designate a skilled and trained IQA who assumes the role of an internal quality monitor responsible for verifying the delivery and assessment of the qualification.

The Internal Quality Assurer for this qualification must meet the following criteria:

- **IQA Expertise:** IQA should have direct or related experience in the field of internal assurance and have at least one year's occupational experience in the areas they are internally quality assuring. This includes knowledge of best practices in designing, conducting, and grading assessments. Their expertise ensures that assessments are both fair and valid.
- **IQA Qualification:** IQA should hold or be currently undertaking a recognised IQA qualification or must have attended the OCN NI IQA Training.
- **Thorough Evaluation of Assessment Tasks and Activities:** IQAs are tasked with conducting in-depth reviews and assessments of all assessment tasks and activities. Their responsibility is to ensure a comprehensive and meticulous oversight of each element to guarantee a just and precise reflection of a learner's abilities and knowledge and to ensure that all assessment and quality assurance requirements are fulfilled.

# 7. Qualification Structure

## 7.1 Qualification Purpose

The OCN NI Level 3 Extended Diploma in Agricultural Business is a unitised qualification on a scale of pass or fail. Learners are expected to demonstrate a comprehensive understanding of the subject matter, ensuring a level of proficiency. The purpose is to provide those undertaking the qualification with a comprehensive set of skills and knowledge, related to agriculture or commercial horticulture business management, while providing business benefits to those undertaking it.

## 7.2 Qualification Level

In the context of the OCN NI Level 3 Extended Diploma in Agricultural Business it is essential to understand the significance of qualification levels, as they play a pivotal role in assessing the depth and complexity of knowledge and skills required for successful attainment. This qualification aligns with Level 3, which signifies a higher level of difficulty and intricacy. It's important to note that qualification levels in the educational framework range from Level 1 to Level 8, complemented by three 'entry' levels, namely Entry 1 to Entry 3.

## 7.3 Qualification Size

### Total Qualification Time (TQT)

This represents the total amount of time a learner is expected to spend to complete the qualification successfully. It includes both guided learning hours (GLH) and independent study or additional learning time.

### Guided Learning Hours (GLH)

These are the hours of guided instruction and teaching provided to learners. This may include classroom instruction, tutorials, or other forms of structured learning.

| OCN NI Level 3 Extended Diploma in Agricultural Business | |
|---|---|
| Total Qualification Time (TQT): | 1800 hours |
| | |
| Total Credits Required: | 180 credits |
| Guided Learning Hours (GLH): | 1080 hours |

## 7.4 How to Achieve the Qualification

To achieve the **OCN NI Level 3 Extended Diploma in Agricultural Business** learners must successfully complete all 9 mandatory units (90 credits) plus 80 credits from only one of the enterprise specific pathways (i.e. Dairy, Beef, Sheep, Pigs, Crops or Horticulture) plus one 10 credit unit from the All Enterprises pathway, totalling 180 credits.

# 8. Assessment Structure

This qualification is assessed through internal assessment and each unit is accompanied by specific assessment criteria that define the requirements for achievement.

## 8.1 Assessment Guidance: Portfolio

The portfolio for this qualification is designed to provide a comprehensive view of a learner's skills and knowledge. It is a holistic collection of evidence that may include a single piece of evidence that satisfies multiple assessment criteria. There is no requirement for learners to maintain separate evidence for each assessment criterion.

When learners are creating their portfolio, they should refer to the assessment criteria to understand the evidence required.

It is essential that the evidence in the portfolio reflects the application of skills in real-world situations. Learners should ensure that they provide multiple examples or references whenever the assessment criteria require it.

## 8.2 Understanding the Units

The units outlined in this specification establish clear assessment expectations. They serve as a valuable guide for conducting assessments and ensuring quality assurance efficiently. Each unit within this specification follows a consistent structure. This section explains the operational framework of these units. It is imperative that all educators, assessors, Internal Quality Assurers, and other personnel overseeing the qualification review and familiarise themselves with this section to ensure a comprehensive understanding of how these units function.

- **Title:** The title will reflect the content of the unit and should be clear and concise.
- **Level:** A unit can have one of six RQF levels: Entry, One, Two, Three, Four or Five. All units within this qualification are Level 3.
- **Credit Value:** This describes the number of credits ascribed to a unit. It identifies the number of credits a learner is awarded upon successful achievement of the unit. One credit is awarded for the learning outcomes which a learner, on average, might reasonably be expected to achieve in a notional 10 hours of learning.
- **Learning Outcome:** A coherent set of measurable achievements.
- **Assessment Criteria:** These enable a judgement to be made about whether or not, and how well, the students have achieved the learning outcomes.
- **Assessment Guidance and Methods:** These detail the different assessment methods within the unit that may be used.
- **Unit Content:** This provides indicative content to assist in teaching and learning.
- **Scope:** This provides possible teaching content.

# 9. Qualification Summary by Unit

**OCN NI Level 3 Extended Diploma in Agricultural Business**

In order to achieve the OCN NI Level 3 Extended Diploma in Agricultural Business the learner must successfully complete all 9 mandatory units (90 credits) plus 80 credits from only one of the enterprise specific pathways (i.e. Dairy, Beef, Sheep, Pigs, Crops or Horticulture) plus one 10 credit unit from the All Enterprises pathway, totalling 180 credits.

Total Qualification Time (TQT) for this qualification: 1800 hours
Guided Learning Hours (GLH) for this qualification: 1080 hours

| Unit Reference Number | OCN NI Unit Code | Unit Title | Credit Value | GLH | Level |
|---|---|---|---|---|---|
| ***Mandatory units*** | | | | | |
| L/618/6896 | CBF343 | Plant and Soil Science | 10 | 60 | Three |
| R/618/6897 | CBF344 | Animal Science and Nutrition | 10 | 60 | Three |
| Y/618/6898 | CBF345 | Health and Safety for Land-based Businesses | 10 | 60 | Three |
| D/618/6899 | CBF346 | Business Management | 10 | 60 | Three |
| J/618/6900 | CBF347 | Business Planning | 10 | 60 | Three |
| L/618/6901 | CBF348 | Undertake a Land-based Business Project | 10 | 60 | Three |
| R/618/6902 | CBF349 | Machinery Operations | 10 | 60 | Three |
| Y/618/6903 | CBF350 | Environmental Sustainability | 10 | 60 | Three |
| D/618/6904 | CBF351 | Habitat Management | 10 | 60 | Three |
| **Enterprise Specific Units** | | | | | |
| ***DAIRY*** | | | | | |
| H/618/6905 | CBF352 | Livestock Production and Husbandry | 10 | 60 | Three |
| K/618/6906 | CBF353 | Animal Health and Welfare | 10 | 60 | Three |
| M/618/6907 | CBF354 | Building Design and Maintenance | 10 | 60 | Three |
| T/618/6908 | CBF357 | Enterprise Management, Supply Chain and Marketing | 10 | 60 | Three |
| A/618/6909 | CBF358 | Dairy Production | 20 | 120 | Three |

| | | | | | |
|---|---|---|---|---|---|
| M/618/6910 | CBF359 | Grassland Production | 20 | 120 | Three |
| ***BEEF*** | | | | | |
| H/618/6905 | CBF352 | Livestock Production and Husbandry | 10 | 60 | Three |
| K/618/6906 | CBF353 | Animal Health and Welfare | 10 | 60 | Three |
| M/618/6907 | CBF354 | Building Design and Maintenance | 10 | 60 | Three |
| T/618/6908 | CBF357 | Enterprise Management, Supply Chain and Marketing | 10 | 60 | Three |
| T/618/6911 | CBF360 | Beef Production | 20 | 120 | Three |
| M/618/6910 | CBF359 | Grassland Production | 20 | 120 | Three |
| ***SHEEP*** | | | | | |
| H/618/6905 | CBF352 | Livestock Production and Husbandry | 10 | 60 | Three |
| K/618/6906 | CBF353 | Animal Health and Welfare | 10 | 60 | Three |
| M/618/6907 | CBF354 | Building Design and Maintenance | 10 | 60 | Three |
| T/618/6908 | CBF357 | Enterprise Management, Supply Chain and Marketing | 10 | 60 | Three |
| K/618/6937 | CBF362 | Sheep Production | 20 | 120 | Three |
| M/618/6910 | CBF359 | Grassland Production | 20 | 120 | Three |
| ***PIGS*** | | | | | |
| H/618/6905 | CBF352 | Livestock Production and Husbandry | 10 | 60 | Three |
| K/618/6906 | CBF353 | Animal Health and Welfare | 10 | 60 | Three |
| M/618/6907 | CBF354 | Building Design and Maintenance | 10 | 60 | Three |
| T/618/6908 | CBF357 | Enterprise Management, Supply Chain and Marketing | 10 | 60 | Three |
| M/618/6938 | CBF363 | Pig Production | 20 | 120 | Three |
| T/618/6939 | CBF364 | Managing Pig Health and Welfare | 10 | 60 | Three |
| K/618/6940 | CBF365 | Advanced Pig Management Systems | 10 | 60 | Three |
| ***CROPS*** | | | | | |
| M/618/6941 | CBF366 | Crop and Horticulture Production and Husbandry | 10 | 60 | Three |

| | | | | | |
|---|---|---|---|---|---|
| T/618/6942 | CBF367 | Integrated Pest Management | 10 | 60 | Three |
| M/618/6907 | CBF354 | Building Design and Maintenance | 10 | 60 | Three |
| T/618/6908 | CBF357 | Enterprise Management, Supply Chain and Marketing | 10 | 60 | Three |
| A/618/6943 | CBF368 | Specialist Machinery Operations | 10 | 60 | Three |
| ***Only one of the Production units below can be chosen:*** | | | | | |
| F/618/6944 | CBF369 | Combinable Crop Production | 20 | 120 | Three |
| R/618/6947 | CBF370 | Potato Production | 20 | 120 | Three |
| ***Only one of the Harvesting and Storage units below can be chosen:*** | | | | | |
| Y/618/6948 | CBF371 | Harvesting and Storage of Combinable Crops | 10 | 60 | Three |
| D/618/6949 | CBF372 | Harvesting and Storage of Potato Crops | 10 | 60 | Three |
| ***HORTICULTURE*** | | | | | |
| M/618/6941 | CBF366 | Crop and Horticulture Production and Husbandry | 10 | 60 | Three |
| T/618/6942 | CBF367 | Integrated Pest Management | 10 | 60 | Three |
| M/618/6907 | CBF354 | Building Design and Maintenance | 10 | 60 | Three |
| T/618/6908 | CBF357 | Enterprise Management, Supply Chain and Marketing | 10 | 60 | Three |
| A/618/6943 | CBF368 | Specialist Machinery Operations | 10 | 60 | Three |
| R/618/6950 | CBF373 | Harvesting and Storage of Horticultural Crops | 10 | 60 | Three |
| ***Only one of the Production units below can be chosen:*** | | | | | |
| Y/618/6951 | CBF374 | Ornamental Crop Production | 20 | 120 | Three |
| H/618/6953 | CBF375 | Soft Fruit Production | 20 | 120 | Three |
| ***OPTIONAL UNITS (for all Enterprises) – only one unit to be completed*** | | | | | |
| K/618/6954 | CBF376 | Human Resource Management | 10 | 60 | Three |
| M/618/6955 | CBF377 | Safe Handling and Application of Pesticides using Vehicle Mounted Sprayers | 10 | 60 | Three |

| | | | | | |
|---|---|---|---|---|---|
| A/618/6957 | CBF378 | Safe Handling and Application of Pesticides using Knapsack Sprayers | 10 | 60 | Three |
| F/618/6958 | CBF379 | All-Terrain Vehicles and Rough Terrain Telescopic Forklift Operations | 10 | 60 | Three |

## Unit Grading Structure

Each unit will be graded as Pass/Merit/Distinction/Fail. All units are internally assessed within this qualification, and each unit has specified assessment criteria at the Pass, Merit and Distinction unit grades.

**Unit grading Matrix**

| Unit grading matrix |
| --- |
| • To achieve a pass in a unit the learner must have successfully completed all of the pass assessment criteria in that unit<br>• To achieve a merit in a unit the learner must have successfully completed all of the pass and merit criteria in that unit<br>• To achieve a distinction in a unit the learner must have successfully completed all of the pass, merit and distinction criteria in that unit |

## Qualification Grading Structure

The qualification will be graded overall as follows:

Pass Pass Pass
Merit Pass Pass
Merit Merit Pass
Merit Merit Merit
Distinction Merit Merit
Distinction Distinction Merit
Distinction Distinction Distinction
Distinction* Distinction Distinction
Distinction* Distinction* Distinction
Distinction* Distinction* Distinction*

## Rationale for Grading Across the Units

Learners achieving a pass should have a sound knowledge and understanding of the area being assessed, the majority of assessment criteria (AC) are at pass level. Learners meeting all learning outcomes at pass standards stated in the AC in a unit will gain a pass for that unit.

Learners achieving a merit will have demonstrated that they can complete more complex tasks beyond the pass level; there are fewer AC's at these levels. Learners meeting all learning outcomes at pass standards, and where available also at merit standards stated in the AC in a unit will gain a merit for that unit.

Learners achieving a distinction will have demonstrated they can complete more complex tasks at a consistently high level, beyond the merit level; there are fewer AC's at these levels. Learners meeting all learning outcomes at pass standards, and where

available also at merit and distinction standards stated in the AC in a unit will gain a distinction for that unit.

## Calculation of the Qualification Grade

The above grades are attained by gaining points for the successful achievement of each unit and the aggregation of those points and conversion to a qualification grade. The following table details the points allocated for pass, merit and distinction for each of the units within the qualification.

| Unit Title | Unit Code | Credit Value | Points per unit grade | | |
|---|---|---|---|---|---|
| | | | Pass | Merit | Distinction |
| Plant and Soil Science | L/618/6896 | 10 | 70 | 80 | 90 |
| Animal Science and Nutrition | R/618/6897 | 10 | 70 | 80 | 90 |
| Health and Safety for Land-based Businesses | Y/618/6898 | 10 | 70 | 80 | 90 |
| Business Management | D/618/6899 | 10 | 70 | 80 | 90 |
| Business Planning | J/618/6900 | 10 | 70 | 80 | 90 |
| Undertake a Land-based Business Project | L/618/6901 | 10 | 70 | 80 | 90 |
| Machinery Operations | R/618/6902 | 10 | 70 | 80 | 90 |
| Environmental Sustainability | Y/618/6903 | 10 | 70 | 80 | 90 |
| Habitat Management | D/618/6904 | 10 | 70 | 80 | 90 |
| Dairy Production | A/618/6909 | 20 | 140 | 160 | 180 |
| Beef Production | T/618/6911 | 20 | 140 | 160 | 180 |
| Sheep Production | K/618/6937 | 20 | 140 | 160 | 180 |
| Pig Production | M/618/6938 | 20 | 140 | 160 | 180 |
| Grassland Production | M/618/6910 | 20 | 140 | 160 | 180 |
| Combinable Crop Production | F/618/6944 | 20 | 140 | 160 | 180 |
| Potato Production | R/618/6947 | 20 | 140 | 160 | 180 |
| Ornamental Crop Production | Y/618/6951 | 20 | 140 | 160 | 180 |
| Soft Fruit Production | H/618/6953 | 20 | 140 | 160 | 180 |

| | | | | | |
|---|---|---|---|---|---|
| Livestock Production and Husbandry | H/618/6905 | 10 | 70 | 80 | 90 |
| Animal Health and Welfare | K/618/6906 | 10 | 70 | 80 | 90 |
| Managing Pig Health and Welfare | T/618/6939 | 10 | 70 | 80 | 90 |
| Advanced Pig Management Systems | K/618/6940 | 10 | 70 | 80 | 90 |
| Harvesting and Storage of Combinable Crops | Y/618/6948 | 10 | 70 | 80 | 90 |
| Harvesting and Storage of Potato Crops | D/618/6949 | 10 | 70 | 80 | 90 |
| Crop and Horticulture Production and Husbandry | M/618/6941 | 10 | 70 | 80 | 90 |
| Integrated Pest Management | T/618/6942 | 10 | 70 | 80 | 90 |
| Building Design and Maintenance | M/618/6907 | 10 | 70 | 80 | 90 |
| Enterprise Management, Supply Chain and Marketing | T/618/6908 | 10 | 70 | 80 | 90 |
| Specialist Machinery Operations | A/618/6943 | 10 | 70 | 80 | 90 |
| Harvesting and Storage of Horticultural Crops | R/618/6950 | 10 | 70 | 80 | 90 |
| Human Resource Management | K/618/6954 | 10 | 70 | 80 | 90 |
| Safe Handling and Application of Pesticides using Vehicle Mounted Sprayers | M/618/6955 | 10 | 70 | 80 | 90 |
| Safe Handling and Application of Pesticides using Knapsack Sprayers | A/618/6957 | 10 | 70 | 80 | 90 |
| All-Terrain Vehicles and Rough Terrain Telescopic Forklift Operations | F/618/6958 | 10 | 70 | 80 | 90 |

The points per unit are added up and then converted to a qualification grade using the following table.

**Points for Qualification Grade Conversion**

OCN NI Level 3 Extended Diploma in Agricultural Business

| Points range | Grade |
|---|---|
| 1260 - 1299 | PPP |
| 1300 - 1339 | MPP |
| 1340 - 1379 | MMP |
| 1380 - 1419 | MMM |
| 1420 - 1459 | DMM |
| 1460 - 1499 | DDM |
| 1500 - 1529 | DDD |
| 1530 - 1559 | D*DD |
| 1560 - 1589 | D*D*D |
| 1590 and above | D*D*D* |

# 10. Unit Content

| | |
|---|---|
| Title | Plant and Soil Science |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF343 |
| Unit Reference No | L/618/6896 |
| *Unit purpose and aim(s):* This unit will enable the learner to understand plant and soil science and how its application can positively impact on soil and plant growth and development. | |

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the structure and function of internal and external plant cells, tissues and organs. | 1.1. Explain the major internal and external plant structures.<br>1.2. Explain the functions of the major plant structures.<br>1.3. Explain the function of the major specialist cells, tissues and organs of given plants. | 1.M.1 Explain the relationship between structure and function for major plant structures. | 1.D.1 Evaluate how the function of internal and external plant structures dictates their use within a land-based sector. |
| 2. Understand the growth and development of plants. | 2.1. Explain the lifecycles of three given plants.<br>2.2. Explain the processes of reproduction in two given plants.<br>2.3. Explain the process of plant germination in plants.<br>2.4. Explain the requirements of plants for major and minor minerals. | 2.M.1 Evaluate at least two plants to identify deficiencies. | |
| 3. Understand key plant processes. | 3.1. Explain the following plant processes:<br>a) photosynthesis<br>b) respiration<br>c) uptake, transport and loss of water and nutrients<br>d) transpiration | 3.M.1 Explain how external and internal factors can affect main processes of plant physiology. | 3.D.1 Explain the manipulation of plant physiology to enhance plant performance. |
| 4. Understand how soil characteristics affect the growth and development of plants and how these are identified. | 4.1. Compare and contrast the characteristics of different soil types.<br>4.2. Determine through investigation the characteristics of a given soil sample.<br>4.3. Explain how soil type and condition affects plant growth and development. | 4.M.1 Explain the optimum soil characteristics for growth of a given plant species. | |
| **Assessment Guidance** | | | |

| The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered. | | |
|---|---|---|
| **Assessment Method** | **Definition** | **Possible Content** |
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Animal Science and Nutrition |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF344 |
| Unit Reference No | R/618/6897 |

*Unit purpose and aim(s):* This unit will enable the learner to understand biological systems in ruminant and non-ruminant livestock. Learners will be able to develop a feeding plan to meet the nutritional requirements of given livestock.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand reproductive systems in livestock. | 1.1. Explain the structure and function of the male and female reproductive systems in ruminant and non-ruminant.<br>1.2. Summarise the role of hormones in the reproductive process. | 1.M.1 Explain the stages of sexual reproduction and gestation in a given farm animal. | 1.D.1 Explain the hormonal control of the oestrous cycle in a given farm animal. |
| 2. Understand respiratory and cardiovascular systems in livestock. | 2.1. Explain the structure and function of the respiratory and cardiovascular systems of a given farm animal. | | |
| 3. Understand digestion and excretion in livestock. | 3.1. Explain the structure and processes of the digestive system in ruminant and non-ruminant livestock.<br>3.2. Explain the structure and function of the excretory system in ruminant and non-ruminant livestock. | 3.M.1 Explain at least three factors which may contribute to the disruption of digestive processes in livestock. | 3.D.1 Evaluate the effects of disruption to digestive processes on livestock health including associated costs. |
| 4. Be able to develop a feeding plan. | 4.1. Summarise factors which affect the nutritional requirements of a given farm animal.<br>4.2. Classify the essential nutrients required for a given farm animal.<br>4.3. Summarise the nutrient content of | 4.M.1 Develop with justification criteria that can be used in the evaluation of the feeding plan in AC 4.4. | 4.D.1 Evaluate the effectiveness of the feeding plan in AC 4.4 including costings and identification of possible areas for improvement. |

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| | feedstuffs for a given animal.<br>4.4. Create a feeding plan to include an appropriate ration for a given group of farm animals. | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Health and Safety for Land-based Businesses |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF345 |
| Unit Reference No | Y/618/6898 |

*Unit purpose and aim(s):* This unit will enable the learner to identify, evaluate and reduce the Health and Safety risks associated with managing a land-based business.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand health and safety legislation and responsibilities within a land-based business. | 1.1. Summarise Northern Ireland health and safety legislation relating to land-based businesses and promoted by the farm safety partnership.<br>1.2. Explain the legal and organisational health and safety responsibilities for the following in a land-based business:<br>a) people<br>b) equipment and materials<br>c) the work area<br>1.3. Explain the importance of carrying out risk assessments for all work activities. | 1.M.1 Evaluate the key health and safety roles and responsibilities of at least three stakeholders involved in a land-based business. | |
| 2. Be able to carry out risk audits and assessments to promote health and safety. | 2.1. Complete a health and safety risk audit to identify relevant risks in at least three of the following risk areas:<br>a) slurry<br>b) animals<br>c) falls<br>d) equipment<br>e) other relevant risks<br>2.2. Carry out as risk assessment for two of the risk areas identified in AC 2.1. | 2.M.1 Create a map identifying the location of potential services and utilities hazards to support the management of health and safety.<br>2.M.2 Develop a communication plan to ensure that persons associated with business activities are made aware of how to minimise | 2.D.1 Evaluate how a positive health and safety culture may be established and promoted in a land-based business. |

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| | | health and safety risks. | |
| 3. Be able to develop a health and safety improvement plan. | 3.1. Summarise types of accidents that may occur based on the risks identified in AC 2.1.<br>3.2. Develop a long term health and safety improvement plan to address the potential accidents identified in AC 3.1.<br>3.3. Explain the possible consequences of not carrying out actions within the long term health and safety improvement plan. | | |
| 4. Be aware of the health and safety records required by land-based businesses. | 4.1. Explain why health and safety records are required by land-based businesses.<br>4.2. Explain the records required and individuals responsible for their maintenance in order to comply with health and safety legislation. | 4.M.1 Evaluate the legal consequences of not adhering to the legislative requirements for recording accidents and incidents. | 4.D.1 Explain how established health and safety procedures and records will assist the management of health and safety in a given land-based business. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Business Management |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF346 |
| Unit Reference No | D/618/6899 |
| *Unit purpose and aim(s):* This unit will enable learners to understand how to use business management tools to analyse and make improvements to a land-based business | |

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the importance of the agri-food industry in Northern Ireland (NI). | 1.1. Summarise the structure and size of the agri-food industry in NI.<br>1.2. Explain the contribution of a given land-based sector to the NI economy.<br>1.3. Identify the types of businesses associated with a given land-based sector and their role.<br>1.4. Summarise the stakeholders associated with a given land-based sector. | 1.M.1 Evaluate the impact of stakeholders on a given land-based sector. | |
| 2. Understand how to use physical and financial records. | 2.1. Explain the importance of maintaining accurate physical and financial records.<br>2.2. Explain two types of physical records.<br>2.3. Explain four types of financial records.<br>2.4. Explain the benefits of cash flow planning and monitoring to the business.<br>2.5. Explain the use of physical and financial records in monitoring business performance and progress. | 2.M.1 Interpret physical records for a given land-based business to inform decision making.<br>2.M.2 Interpret financial records for a given land-based business to inform decision making. | 2.D.1 Evaluate a given land-based business performance against industry benchmarks using physical and financial records identifying possible areas for improvement. |
| 3. Understand the benefits of how Information Technology (IT) | 3.1. Identify IT applications available to land-based businesses | 3.M.1 Develop a plan to incorporate at least one IT tool for physical | 3.D.1 Evaluate how the IT tool used in the plan developed in AC 3.M.1 may improve |

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| can be used to inform business decisions within a land-based business. | assessing the benefits of each including how they inform business decision making.<br>3.2. Evaluate how the use of online tools may enhance business decision-making within a land-based business. | and financial record management for a given land-based business. | performance for the given land-based business. |
| 4. Understand business resources and structures. | 4.1. Compare and contrast the legal and organisational structures of land-based businesses.<br>4.2. Explain the taxation system relating to a given land-based business.<br>4.3. Explain using examples the different types of resource requirements of a given land-based business.<br>4.4. Summarise using examples different job roles and responsibilities in a given land-based business. | 4.M.1 Evaluate the effectiveness of the legal structure for a given land-based business. | 4.D.1 Evaluate how resources, business structure and stakeholder relationships affect success in a given land-based business. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |

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| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Business Planning |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF347 |
| Unit Reference No | J/618/6900 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the skills required to manage a business. The learner will also be able to assess the business environment a given business operates within, develop a business idea and prepare a business plan.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Be able to evaluate the business environment in order to identify business opportunities. | 1.1. Explain the relationship between the operation of a given business and the marketplace in which it operates.<br>1.2. Carry out a Strengths, Weaknesses Opportunities and Threats (SWOT) analysis to identify internal and external factors that currently affect a given business.<br>1.3. Summarise three opportunities for business development based on findings from SWOT analysis undertaken in AC 1.2. | 1.M.1 Evaluate key internal and external factors that currently affect the operations of a given business based on findings from SWOT analysis undertaken in AC 1.2. | 1.D.1 Develop recommendations based on findings from SWOT analysis undertaken in AC 1.2. to address change within the given business environment. |
| 2. Be able to research and plan for development opportunities for a given business. | 2.1. Research the market for a business development opportunity.<br>2.2. Use an appropriate tool or methodology to develop an idea for a business development opportunity identified in A.C.2.1.<br>2.3. Estimate the resource requirements for the business development opportunity identified in AC 2.1. | 2.M.1 Summarise the main legislative requirements the business should consider when implementing the business development. opportunity identified in AC 2.1. | 2.D.1 Evaluate the key factors to be considered when implementing the business development opportunity identified in AC 2.1. and make recommendations regarding its potential success. |
| 3. Understand the skills and personal development needs required to successfully manage a business. | 3.1. Summarise the key skills required to successfully manage a business.<br>3.2. Explain the importance of continual professional | 3.M.1 Carry out a skills and knowledge audit for a given business opportunity.<br>3.M.2 Evaluate findings of skills and knowledge audit | 3.D.1 Create a training and development plan based on the findings of the skills audit undertaken in AC 3.M.1. |

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| | development for a manager within a successful business.<br>3.3. Summarise the non-financial business support and advice available to assist with running a business from each of the following:<br>a) government<br>b) non-government bodies<br>c) commercial businesses | undertaken in AC 3.M.1 identifying possible areas for training and development. | |
| 4. Be able to create a business plan for a given business development opportunity. | 4.1. Create a business plan for a given business development opportunity to include the following:<br>a) nature of the business<br>b) business aims and objectives<br>c) legal and organisational structure<br>d) market research and competitor analysis<br>e) business marketing plan<br>f) physical, financial and human resource requirements<br>g) financial forecasts - set-up costs, fixed costs, variable costs and cash flow forecast<br>h) measures of success including financial and non-financial key performance indicators | 4.M.1 Research and evaluate the funding options available to finance the business plan created in AC 4.1. | 4.D.1 Develop contingency plans for at least three potential changes within the business environment that may impact the business plan created in AC 4.1. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| | A collection of documents containing work that shows the learner's progression through the course | |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Undertake a Land-based Business Project |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF348 |
| Unit Reference No | L/618/6901 |

*Unit purpose and aim(s):* This unit will enable the learner to be able to undertake a land-based business project including developing, implementing and reporting on the project plan.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Be able to research and develop a project proposal within the land-based business sector. | 1.1. Research and select an appropriate area of interest that may facilitate the development of a project proposal.<br>1.2. Investigate a specific issue or topic within the area selected in AC 1.1 for project.<br>1.3. Create a project proposal for the project specified in AC 1.2 to include the following<br>a) reasoning for the investigation<br>b) methodology<br>c) timelines<br>d) format of report<br>e) presentation of findings | 1.M.1 Evaluate the potential impact of the proposed project. | 1.D.1 Justify the potential value of the project to the land-based business sector or individual business, quantifying the financial and non-financial benefits. |
| 2. Be able to create a project plan. | 2.1. Develop a project plan featuring specific, measurable, achievable, realistic and time-bound (SMART) objectives for the project proposal created in AC 1.3 to include the following criteria :<br>a) milestones<br>b) resources<br>c) research methods<br>d) evidence based outcomes | 2.M.1 Justify reasons for selection of resources identified in A.C 2.1. | |
| 3. Be able to carry out the project adhering to the project plan. | 3.1. Implement the project ensuring outcomes are appropriately evidence based.<br>3.2. Monitor project in line with criteria detailed in project plan developed in AC 2.1. | 3.M.1 Explain the importance of regularly monitoring project progress against the project plan. | |

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| | 3.3. Analyse the health and safety implications of undertaking the project identified in A.C.3.1. | | |
| 4. Be able to report on and evaluate the project. | 4.1. Record and present outcomes of the project undertaken in A.C 3.1 to a given audience in an appropriate and effective manner.<br>4.2. Evaluate the strengths and weaknesses of the project.<br>4.3. Develop a summary report based on the outcomes of the project identifying possible further actions. | 4.M.1 Develop a summary report on the project undertaken in AC 3.1. identifying possible areas for improvement in how the project was conducted.<br>4.M.2 Justify a course of action based on the outcomes of the project undertaken in AC 3.1. | 4.D.1 Develop a detailed project report to include<br>a) project planning<br>b) monitoring undertaken, completion and outcomes<br>c) resource use<br>d) project evaluation<br>e) recommendations and possible further actions |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Machinery Operations |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF349 |
| Unit Reference No | R/618/6902 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the purpose, operation and maintenance of a range of land-based machinery with particular reference to health and safety and the environment. The learner will also be required to demonstrate skills in relation to operation and maintenance of a range of land-based machinery

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the purpose, function and legislative requirements associated with land-based machinery. | 1.1. Explain legislative requirements for the operation of two given land-based machines.<br>1.2. Summarise the different power sources used in land-based machinery.<br>1.3. Summarise machinery which is subject to regular testing in order to comply with legislative requirements. | 1.M.1 Justify the selection of a piece of land-based machinery to complete a given task to include suitability, performance and cost.<br><br>1.M.2 Develop a training plan for operators using the machines identified in AC 1.1. | |
| 2. Be able to prepare land-based machinery and application equipment. | 2.1. Create a pre-work checklist in line with manufacturer's guidance .<br>2.2. Perform daily pre-start checks on a given piece of land-based machinery.<br>2.3. Summarise the benefits of correct preparation and adjustment of land-based machinery.<br>2.4. Set up a given piece of application equipment to apply a specified rate of product. | | |
| 3. Be able to safely operate land-based machinery and implements. | 3.1. Demonstrate the safe coupling and uncoupling of land-based implements.<br>3.2. Demonstrate the safe operation of a given land-based machine to carry out an activity. | 3.M.1 Critically evaluate the operation of the machinery identified in AC 3.2 identifying possible | |

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| | 3.3. Explain how site and environmental conditions can affect the safe and effective operation of the machine identified in in AC 3.2. | areas for improvement of safety of the operation. | |
| 4. Be able to carry out land-based machinery maintenance and basic repairs. | 4.1. Diagnose and identify faults, defective or worn parts in a given land-based machine.<br>4.2. Explain the benefits of adhering to the manufacture's manual and undertaking preventative maintenance.<br>4.3. Perform maintenance and basic repairs on a land-based machine. | 4.M.1 Create service history and maintenance records for a given land-based machine. | 4.D.1 Compare and contrast two options for servicing and repair of a given land-based machine to include cost, parts and labour.<br>4.D.2 Select with justification the preferred option for servicing and repair identified in AC 4.D.1 . |
| 5. Understand the environmental impact of land-based machinery operations. | 5.1. Explain three impacts that land-based machinery operations may have on the environment.<br>5.2. Explain how hazardous substances associated with land-based machinery operation and servicing should be managed to minimise environmental impact.<br>5.3. Summarise the effect tyre pressure and axle weight have on soil structure under different soil conditions. | 5.M.1 Justify for a given scenario a suitable inflation pressure of a tyre to minimise soil compaction. | 5.D.1 Evaluate tyre or track technologies that can minimise soil compaction including cost and practicality of use. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| | A collection of documents containing work that shows the learner's progression through the course | |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Environmental Sustainability |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF350 |
| Unit Reference No | Y/618/6903 |

*Unit purpose and aim(s):* This unit will enable learners to understand the impact of land-based business practices on ecosystems. It will also provide learners with an understanding of good management practices that will enhance the soil, air, water and biodiversity.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand environmentally sustainable management practices that can be adopted by land-based businesses. | 1.1. Explain sustainability in the context of a land-based business.<br>1.2. Explain four options a land-business may take to enhance environmental sustainability.<br>1.3. Explain four threats that may impact negatively on environmental sustainability.<br>1.4. Summarise how businesses may improve environmental sustainability by introducing positive practices. | 1.M.1 Compare and contrast two sustainability options identified in A.C 1.2 that a given land-based business could implement. | 1.D.1 Evaluate how a sustainability option identified in A.C 1.M.1. could be implemented in a given land-based business. |
| 2. Understand relevant environmental legislation and codes of practice that impact on the land-based sector. | 2.1. Summarise the relevant legislation and codes of practice for soil, air, water and biodiversity.<br>2.2. Explain the records to be kept in order to comply with legislation.<br>2.3. Summarise current legislation relating to nutrient management.<br>2.4. Summarise the environmental financial support and advisory | 2.M.1 Develop an environmental management plan for a given land-based business which adheres to relevant legislation. | 2.D.1 Evaluate the overall positive impact of a piece of environmental legislation relating to a given land-based business. |

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| | services available for a land-based business. | | |
| 3. Understand the sources and effects of unsustainable management from the land-based sector. | 3.1. Define what is meant by unsustainable management.<br>3.2. Explain the effects that unsustainable management has on soil, air, water and biodiversity ecosystems.<br>3.3. Summarise the main areas of unsustainable practices affecting soil, air, water and biodiversity ecosystems. | 3.M.1 Compare and contrast two unsustainable management practices in a given ecosystem. | |
| 4. Understand the positive impacts that can be achieved, by businesses implementing good environmental practices. | 4.1. Summarise how good land practices impact positively on the following using two examples for each:<br>a) soils<br>b) air quality<br>c) biodiversity<br>d) water quality<br>4.2. Summarise the main measures that may be taken to mitigate pollution of soil, air, water and biodiversity ecosystems. | 4.M.1 Evaluate the effectiveness of two different measures that may be taken in order to positively impact on soil, air, water and biodiversity for a given land-based business | 4.D.1 Evaluate the effectiveness and positive impact of two measures identified in A.C 4.2 on pollution and land-based business performance |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the | Record of observation<br>Learner notes/written work |

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| | tutor or by learners, to enable learners to practise and apply skills and knowledge | Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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| Title | Habitat Management |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF351 |
| Unit Reference No | D/618/6904 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the range of different habitats and biodiversity in Northern Ireland and the principles of habitat creation and management.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
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| 1. Understand the main habitat types and biodiversity present in Northern Ireland (NI). | 1.1. Summarise three habitat types present in NI and their benefits to a land-based business and biodiversity.<br>1.2. Summarise the main threats to habitats and biodiversity in NI.<br>1.3. Explain the ecological importance of having a range of different habitats on a land-based business. | 1.M.1 Explain how land-based business practices may improve habitats. | 1.D.1 Evaluate indicator flora and fauna species and species composition associated with a given habitat. |
| 2. Understand how to comply with the legislation and policies in place to protect habitats and biodiversity. | 2.1. Explain the main legislation and policies that are in place to protect habitats and biodiversity.<br>2.2. Summarise the impact on land-based business practices of the legislation and policies identified in AC 2.1.<br>2.3. Summarise organisations that provide support and advice on habitat maintenance and establishment. | 2.M.1 Analyse the impact on a land-based business if the legislation and policies are not adhered to. | 2.D.1 Evaluate how organisations can be utilised to maintain or enhance existing farm habitats. |
| 3. Be able to carry out a farmland habitat survey to inform future maintenance or enhancement. | 3.1. Explain the function of habitat and biodiversity benchmark surveys.<br>3.2. Carry out a habitat and biodiversity benchmark survey on a given land- | 3.M.1 Explain the benefits to the land-based business of the action plan created in AC 3.4. | 3.D.1 Evaluate how the benefits identified in A.C 3.M.1 may be achieved through modifying current management practices and make possible recommendations for improvement. |

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| | based business habitat.<br>3.3. Report on the findings of the survey carried out in A.C.3.2.<br>3.4. Create a best management practice action plan for the habitat identified in AC 3.2 including how it can be:<br>a) be maintained<br>b) improve its biodiversity value<br>c) include the physical resources required to best manage the existing habitat | | |
| 4. Understand how to create a new habitat. | 4.1. Research a suitable new habitat that could be established on a given site.<br>4.2. Develop a Habitat Action Plan (HAP) on a given site to include:<br>a) biodiversity benefits<br>b) physical resources required<br>c) biodiversity aftercare<br>d) financial support schemes | 4.M.1 Set and justify targets for future benchmarking of the new habitat identified in AC 4.1.<br>4.M.2 Justify the new habitat design, site selection, land preparation and suitable species selection in line with the HAP developed in AC.4.2. | 4.D.1 Carry out the necessary work to establish the new habitat in line with the HAP developed in A.C 4.2. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Livestock Production and Husbandry |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF352 |
| Unit Reference No | H/618/6905 |

*Unit purpose and aim(s):* This unit will enable the learner to understand livestock production systems and husbandry procedures in order to improve the efficiency and standard of livestock production systems.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the livestock production systems commonly used for a range of livestock in Northern Ireland (NI). | 1.1. Summarise the main livestock production systems in NI.<br>1.2. Explain the use of different livestock breeds within production systems.<br>1.3. Compare and contrast the use of pure-bred and cross-bred livestock.<br>1.4. Summarise the factors that determine the choice of a livestock production system for a given farm business. | 1.M.1 Review changes over a given time period for a given livestock production system including numbers, values and markets. | 1.D.1 Analyse the factors that have driven the changes to the livestock production system reviewed in A.C.1.M.1 including future potential for the production system. |
| 2. Understand the physical conditions and appropriate accommodation requirements for farm livestock. | 2.1. Summarise the accommodation requirements for livestock production system.<br>2.2. Explain the routine accommodation checks required for two different livestock accommodations.<br>2.3. Explain why outdoor livestock production systems are not prevalent in NI. | 2.M.1 Justify the accommodation choice for a given farm animal production system. | |
| 3. Be able to handle livestock safely. | 3.1. Perform risk assessments for at least two daily routines on a given livestock production system. | 3.M.1 Interpret and apply health and safety legislation relevant to livestock husbandry tasks. | 3.D.1 Explain behaviour patterns of a given farm animal and how this affects the safe handling of animals. |

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| | 3.2. Justify the selection of appropriate equipment to carry out safe animal handling in a farm setting.<br>3.3. Demonstrate safe handling techniques of at least five animals. | | |
| 4. Be able to carry out routine husbandry tasks. | 4.1. Summarise routine husbandry tasks for livestock production systems.<br>4.2. Select a livestock enterprise and carry out five routine husbandry tasks in safe and efficient manner.<br>4.3. Explain the importance of completing appropriate records on completion of routine tasks. | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Animal Health and Welfare |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF353 |
| Unit Reference No | K/618/6906 |
| *Unit purpose and aim(s):* This unit will enable learners to understand the principles of animal health and welfare issues as they relate to an enterprise | |

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Be able to manage livestock health in accordance with legislation. | 1.1. Explain giving examples the five freedoms of animal welfare.<br>1.2. Explain the signs of good and ill health in given farm animals.<br>1.3. Carry out health checks on given farm animals using equipment appropriately.<br>1.4. Explain why the handling of animals should comply with relevant legislation and minimise stress and injury. | 1.M.1 Summarise the health checks carried out in A.C 1.3 to assist monitoring of animals. | 1.D.1 Evaluate the health status and well-being of animals on a given farm, identifying areas for possible improvement. |
| 2. Understand how to manage common diseases and disorders that affect livestock. | 2.1. Explain the role of pathogenic organisms in animal disease and the immune system.<br>2.2. Explain the reasons for and methods of preventative care and treatment used for animals.<br>2.3. Summarise common diseases and disorders in given livestock and their impact on health and welfare including notifiable and zoonotic diseases.<br>2.4. Summarise the prevention and treatment of common diseases | 2.M.1 Summarise the role of the immune system, including the different types of immunity and the process of the immune response. | 2.D.1 Evaluate the effects of a zoonotic disease and a notifiable disease on a farm. |

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| | and disorders in given livestock.<br>2.5. Explain the importance of minimising the use of antimicrobial treatments to prevent antimicrobial resistance. | | |
| 3. Understand how to promote and maintain the health and welfare of animals. | 3.1. Explain factors which contribute to the overall health status of animals on a farm.<br>3.2. Explain the importance of biosecurity to animal health and welfare.<br>3.3. Summarise biosecurity measures that may be implemented on a farm.<br>3.4. Develop a plan to promote and maintain animal health and welfare for a production cycle/year. | 3.M.1 Implement the plan in A.C.3.4 for a given livestock and explain the outcome. | 3.D.1 Evaluate the effectiveness of current on-farm bio-security measures identifying areas for improvement. |
| 4. Be able to administer and record animal treatments. | 4.1. Carry out the administration of at least three basic routine and two non-routine animal treatments safely, in line with codes of practice and legislation.<br>4.2. Explain methods for monitoring animals after treatment.<br>4.3. Explain the importance of the following in relation to medicines:<br>a) monitoring animals after treatment<br>b) accurate record keeping<br>c) adhering to withdrawal periods<br>4.4. Complete required medicine records. | 4.M.1 Explain the requirements by quality assurance schemes for recording and monitoring animal treatments. | |

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| | 4.5. Summarise disposal methods for:<br>a) medicines<br>b) needles<br>c) syringes<br>d) dead livestock | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Building Design and Maintenance |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF354 |
| Unit Reference No | M/618/6907 |

*Unit purpose and aim(s):* This unit will enable the learner to know how to assess the existing and future building requirements for a given enterprise. The learner will also be able to design a new building for a specific use and understand the importance of maintenance and contingency planning.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Be able to undertake an assessment of the existing buildings for a given enterprise. | 1.1. Conduct an inventory of existing buildings for a given enterprise including identification of purpose.<br>1.2. Summarise the suitability of existing buildings identified in inventory in AC 1.1 in terms of:<br>a) space and storage<br>b) access, layout and flow<br>c) physical condition<br>d) environmental control | 1.M.1 Evaluate the suitability of existing buildings identified in inventory undertaken in AC 1.1 using an appropriate tool or methodology identifying possible areas for improvement. | 1.D.1 Make recommendations on how existing buildings may be improved, to address possible improvements identified in AC 1.M.1. |
| 2. Be able to identify future building needs for a given enterprise. | 2.1. Explain at least two potential circumstances that may influence future building needs<br>2.2. Identify future building needs to meet one circumstance identified in AC 2.1<br>2.3. Explain the options available to meet the needs identified in A.C.2.2 . | 2.M.1 Select and justify the preferred options identified in AC 2.3. | |
| 3. Be able to contribute to the development of a design for a new building for a specific use. | 3.1. Explain how the following impact on building design process:<br>a) building use<br>b) siting factors<br>c) structure<br>d) building materials and internal fittings<br>e) legislative factors<br>f) environmental factors | 3.M.1 Evaluate at least two appropriate technologies that could be incorporated within a new building design or specification<br>3.M.2 Analyse the financial implications of at least two options for one component of the new building | 3.D.1 Justify the building design or specification and the possible impact on the selected enterprise. |

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| | g) energy saving factors<br>3.2. Explain two technologies that may be incorporated into building design to address two of the factors in AC 3.1.<br>3.3. Summarise factors to be considered which may impact on the capital cost of the new building for a specific use.<br>3.4. Design the layout of new building with key measurements for a specific use. | design in AC 3.4 using given costs. | |
| 4. Understand the need for building and equipment maintenance and contingency planning. | 4.1. Summarise key areas of buildings and equipment requiring routine maintenance.<br>4.2. Explain the importance of building and equipment maintenance to their upkeep.<br>4.3. Explain the importance of contingency planning. | 4.M.1 Develop a detailed routine maintenance schedule. | 4.D.1 Evaluate the potential to increase the lifespan of the building structure through future proofing design. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Enterprise Management, Supply Chain and Marketing |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF357 |
| Unit Reference No | T/618/6908 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the principles of enterprise management within the land-based industry including physical and financial performance, supply chains, quality management and marketing. The learner will also be able to develop business improvement strategies.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the factors that affect the physical and financial performance of an enterprise. | 1.1. Summarise key business performance measurement and benchmarking techniques.<br>1.2. Summarise the key physical and financial performance indicators and appropriate targets for a given enterprise. | 1.M.1 Evaluate how the physical performance of a given business has affected the margins achieved within a given enterprise.<br>1.M.2 Evaluate the financial performance of a given enterprise using appropriate benchmarking data. | 1.D.1 Use the evaluations undertaken in AC 1.M.1 and 1.M.2 to inform recommendations for at least two options for enterprise improvement. |
| 2. Be able to develop strategies for enterprise improvement. | 2.1. Explain at least four strategies that can be used to improve enterprise performance.<br>2.2. Produce an improvement plan for a given enterprise to include rationale, aims and objectives<br>2.3. Evaluate the physical and financial resource requirements for the enterprise improvement plan identified in AC 2.2.<br>2.4. Develop an action plan including milestones for implementation of the improvement plan identified in AC 2.2. | 2.M.1 Justify the rationale, aims and objectives for the improvement plan identified in AC 2.2.<br>2.M.2 Evaluate the impact of key legislative requirements on the implementation of improvement plan identified in AC 2.2. | 2.D.1 Develop key performance indicators and explain how these can be used to monitor performance. |
| 3. Understand the agri-food or horticulture supply chain and associated quality management systems. | 3.1. Summarise the supply chain for a given agri-food or horticulture business.<br>3.2. Explain using examples the features of an | 3.M.1 Evaluate the benefits of a quality management system within an agri-food supply chain. | 3.D.1 Review management procedures within a given enterprise to ensure compliance with quality management systems identifying |

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| | efficient supply chain in a given agri-food or horticulture business.<br>3.3. Explain using examples the quality management systems and practices associated with a given agri-food or horticulture business. | | possible areas for improvement. |
| 4. Understand the role of marketing for a given enterprise. | 4.1. Identify current and potential customers and competitors of a given enterprise.<br>4.2. Explain the components of the marketing mix for a given enterprise<br>4.3. Explain what is meant by branding and the importance of it in the promotion of local produce. | 4.M.1 Evaluate the benefits of meeting market requirements for a given enterprise. | 4.D.1 Evaluate potential markets for a given enterprise including supply chain challenges. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Dairy Production |
| Level | Three |
| Credit Value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF358 |
| Unit Reference No | A/618/6909 |
| *Unit purpose and aim(s):* The purpose of this unit will enable the learner to understand the husbandry and management of dairy production and carry out routine dairy stock skills. | |

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the structure, production systems and financial considerations of the dairy industry. | 1.1. Summarise the structure of the dairy industry in relation to cow numbers, yield and price in the following :<br>a) Northern Ireland (NI)<br>b) United Kingdom<br>c) European Union<br>d) rest of world<br>1.2. Describe five dairy cow breeds used in NI production systems.<br>1.3. Explain three dairy production systems in NI.<br>1.4. Summarise the strengths and weaknesses of one dairy production system in NI.<br>1.5. Calculate a Gross Margin for a dairy herd. | 1.M.1 Compare and contrast two NI dairy production systems. | 1.D.1 Evaluate a given dairy production system, identifying unit cost including per litre, cow and hectare against industry standards.<br><br>1.D.2 Summarise at least three possible areas for improvement for the dairy production system evaluated in AC 1.D.1. |
| 2. Understand the impact of dairy marketing systems. | 2.1. Explain factors that may affect milk price paid at farm level.<br>2.2. Summarise the requirements of different NI milk contracts.<br>2.3. Explain pricing trends for local liquid milk, powder and cheese and the influence of world markets.<br>2.4. Differentiate between milk payment systems | 2.M.1 Critically compare for a given milk sales volume and quality the outcomes of two payment regimes. | 2.D.1 Critically evaluate the potential of the NI dairy industry using a strengths, weaknesses, opportunities and threats (SWOT) analysis. |

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| | in NI and Republic of Ireland<br>2.5. Compare the advantages and disadvantages of a given milk marketing system. | | |
| 3. Understand the principles of rearing dairy herd replacements. | 3.1. Explain what is meant by the term herd replacement rate and how it is calculated.<br>3.2. Explain the nutritional requirements and growth targets of the following :<br>a) calves aged 0-3 months<br>b) weaned calves<br>c) bulling heifers<br>3.3. Explain the benefits of 24 month calving.<br>3.4. Summarise three key diseases of dairy herd replacements that may affect performance.<br>3.5. Explain the control and prevention of the diseases identified in AC 3.4.<br>3.6. Calculate a Gross Margin for a given heifer replacement enterprise. | 3.M.1 Develop a replacement plan with targets for a given dairy herd including:<br>a) nutrition<br>b) growth<br>c) health | 3.D.1 Evaluate the cost of a given heifer rearing system and identifying two possible areas for improvement. |
| 4. Understand dairy herd breeding and factors that affect fertility and performance. | 4.1. Explain the oestrus cycle, including the physical signs of heat in a dairy cow.<br>4.2. Explain the methods and associated benefits of sire selection criteria for a dairy herd.<br>4.3. Explain the use and benefits of maternal and paternal information in selecting stock for breeding.<br>4.4. Summarise three methods of heat | 4.M.1 Create a breeding plan to include the use of sexed semen, synchronisation and pregnancy diagnosis for a given group within a herd of cows or heifers. | 4.D.1 Evaluate the reproductive performance of a given dairy herd against targets identified in AC 4.8 identifying possible areas for improvement. |

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| | detection used in dairy herds.<br>4.5. Compare the benefits of natural service with Artificial Insemination (AI).<br>4.6. Summarise the advantages and disadvantages of using sexed semen.<br>4.7. Summarise the advantages and disadvantages of synchronisation in dairy herds.<br>4.8. Define, calculate and set targets for the following dairy herd fertility parameters:<br>a) conception rate<br>b) submission rate<br>c) calving interval<br>d) voluntary waiting period<br>4.9. Explain the dairy herd fertility records required and the importance of maintaining these. | | |
| 5. Understand the management of a dairy cow at calving. | 5.1. Explain the management of a dairy cow for the week prior to calving including:<br>a) housing and environment<br>b) health<br>5.2. Explain the management of a dairy cow and its calf during parturition including:<br>a) signs of calving,<br>b) timing interventions<br>c) hygiene<br>d) operator safety<br>e) cow welfare<br>f) colostrum collection<br>5.3. Explain the management of | 5.M.1 Create a staff standard operating procedure (SOP) for the management of the cow and calf during parturition. | |

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| | the dairy cow and its calf during the first week after calving. | | |
| 6. Understand the nutritional requirements and associated management of the dairy cow throughout the production cycle. | 6.1. Summarise five nutritional requirements of a dairy cow.<br>6.2. Explain the overall Maintenance plus (M+) System used in feeding dairy cows.<br>6.3. Explain the feeding requirements of the cow and how these change throughout lactation including:<br>a) early lactation<br>b) late lactation<br>c) pregnancy and the dry period<br>6.4. Explain two feeding regimes based on a housed and a grazing system.<br>6.5. Summarise how the cow's diet affects milk quality. | 6.M.1 Formulate a ration based on given feed inputs to meet the energy and protein requirements of a dairy cow at a given stage of lactation. | 6.D.1 Develop costed rations for a given group of dairy cows based on a given range of forage sources to meet performance targets.<br>6.D.2 Justify the preferred ration from those developed in AC 6.D.1. |
| 7. Understand dairy cow health, management and the main production related diseases. | 7.1. Summarise the indicators of poor health in dairy cows.<br>7.2. Describe five common production cycle diseases of dairy cows and the control and prevention measures for each.<br>7.3. Develop a herd health plan to include the main vaccination and dosing treatments over a dairy cow's production cycle.<br>7.4. Explain the importance of minimising the use of antimicrobial treatments to prevent antimicrobial | 7.M.1 Develop a staff SOP in the prevention and treatment for a given disease. | 7.D.1 Analyse the benefits and risks associated with Selective Dry Cow Therapy (SDCT) on two given dairy herds. |

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| | resistance in dairy cows. | | |
| 8. Understand statutory milk hygiene requirements, their importance and application to the production of clean safe milk. | 8.1. Summarise the statutory requirements for milk hygiene.<br>8.2. Summarise four milking systems.<br>8.3. Explain the key measures of milk hygiene quality.<br>8.4. Summarise three causes of poor milk hygiene quality.<br>8.5. Summarise the benefits of four key steps within a milking procedure.<br>8.6. Explain the importance of routine milking system maintenance. | 8.M.1 Analyse the financial impact of two given levels of milk hygiene for a given farm situation. | |
| 9. Be able to perform routine dairy stock procedures safely. | 9.1. Perform at least four routine dairy stock procedures taking into account risk assessment.<br>9.2. Perform at least four routine procedures associated with the care of a young calf taking into account risk assessment.<br>9.3. Perform condition scoring on three different dairy cows using the five point scale, taking into account risk assessment.<br>9.4. Perform the tasks associated with drying off a dairy cow, taking into account risk assessment.<br>9.5. Perform routine milking to include set up, milking and cleaning to ensure optimum milk quality and animal welfare, taking into account risk assessment. | | |

| Assessment Guidance | | |
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| The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered. | | |
| **Assessment Method** | **Definition** | **Possible Content** |
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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| Title | Beef Production |
| Level | Three |
| Credit Value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF360 |
| Unit Reference No | T/618/6911 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the husbandry and management of beef production and carry out routine beef stock procedures.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
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| 1. Understand the structure of the beef industry in Northern Ireland (NI). | 1.1. Explain the structure of the NI beef industry.<br>1.2. Summarise two typical beef supply chains in NI<br>1.3. Summarise the marketing trends of beef cattle and calves in NI<br>1.4. Explain the main current challenges affecting the beef industry in NI | 1.M.1 Research and analyse market trends in relation to beef production systems in NI. | 1.D.1 Critically evaluate the potential of the NI beef industry using a strengths, weaknesses, opportunities and threats (SWOT) analysis. |
| 2. Understand common beef production systems. | 2.1. Explain four beef production systems in NI<br>2.2. Summarise the main characteristics of eight beef breeds commonly used in NI production systems.<br>2.3. Evaluate the suitability of the eight beef breeds for different given production systems.<br>2.4. Explain the key factors that influence the choice of production system.<br>2.5. Calculate a gross margin for a given beef production system. | 2.M.1 Evaluate strengths and weaknesses of the beef production system identified AC 2.5 based on the gross margin. | 2.D.1 Evaluate a given beef production system identify unit costs, against industry standards identifying at least three possible areas for improvement. |
| 3. Understand the marketing of beef cattle. | 3.1. Summarise market requirements and marketing outlets for four beef production systems.<br>3.2. Explain the procedure for selecting finished beef livestock.<br>3.3. Explain pricing trends for beef livestock in NI over a five-year period. | | |

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| | 3.4. Compare the advantages and disadvantages of liveweight marketing versus deadweight marketing. | | |
| 4. Understand the factors that affect beef carcase quality and grading. | 4.1. Explain the carcase classification system used in NI for grading finished beef cattle.<br>4.2. Explain the factors that affect Kill Out % (KO%) in a beef animal.<br>4.3. Explain the factors that will impact on the carcase price received for a beef animal.<br>4.4. Explain the penalty system imposed for out-of-spec animals.<br>4.5. Explain how BovIS is used to analyse herd slaughter performance. | 4.M.1 Analyse given sales data provided and discuss the weights, grade and fat class achieved for the class of livestock slaughtered and identify improvements that can be made. | 4.D.1 Evaluate using BovIS past herd performance identifying possible areas for improvement. |
| 5. Understand suckler herd breeding and factors that affect fertility and performance. | 5.1. Explain the key reproductive targets for a given beef herd.<br>5.2. Summarise target cow body condition score at key stages of the production cycle.<br>5.3. Summarise factors affecting body condition score and its impact on cow fertility and productivity.<br>5.4. Explain the oestrus cycle including the physical signs of heat in a suckler cow.<br>5.5. Summarise factors affecting the cow's expression of heat behaviour.<br>5.6. Explain the factors affecting conception rate.<br>5.7. Explain the management of replacements including feeding and target growth rates.<br>5.8. Explain the benefits of using Estimated Breeding Values (EBVs) to aid with the selection of a beef bull for a suckler herd. | 5.M.1 Evaluate the merits of calving suckler replacements at 24 months of age.<br>5.M.2 Select with justification a beef sire based on EBVs for a given beef production system. | 5.D.1 Evaluate the reproductive performance of a given beef herd against targets identifying possible areas for improvement. |

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| | 5.9. Explain the importance of maintaining cow fertility records and the basic records needed to monitor fertility.<br>5.10. Explain the advantages and disadvantages of using AI versus natural service in the suckler herd. | | |
| 6. Understand suckler herd health. | 6.1. Explain health requirements for a given beef production system.<br>6.2. Summarise the indicators of poor health in cattle.<br>6.3. Summarise five common diseases in suckler cows and beef cattle their prevention and control.<br>6.4. Explain the importance of Sustainable Control of Parasites (SCOPs) in reducing the build-up of resistance.<br>6.5. Explain the importance of minimising the use of antimicrobial treatments to prevent antimicrobial resistance in suckler cows and beef cattle.<br>6.6. Develop a herd health plan for a given enterprise including the main vaccination and dosing treatments over a full year.<br>6.7. Explain management procedures that should be applied before and after weaning to reduce health and welfare problems in calves.<br>6.8. Explain the management of the suckler cow at calving.<br>6.9. Explain the importance of colostrum to the newborn calf. | 6.M.1 Determine for a given suckler herd the control measures for a specific disease. | |

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| | 6.10. Summarise at least four common health problems that occur at calving time. | | |
| 7. Understand the nutritional requirements of suckler cow and beef herds. | 7.1. Develop a plan for the grazing and feed requirements of given suckler cow throughout the production cycle including:<br>a) pre-breeding<br>b) mid-pregnancy<br>c) late pregnancy<br>d) calving<br>e) lactation<br>7.2. Explain the nutritional and mineral requirements of the following including the factors that affect feed levels:<br>a) dry cows in late pregnancy<br>b) lactating cows<br>7.3. Explain the impact of silage quality on supplementary feed levels for a given suckler cow or beef herd. | 7.M.1 Formulate a ration to meet target growth rates, energy and protein requirements for a given group of cattle based on a given silage analysis. | 7.D.1 Develop and cost rations for a given group of finishing cattle based on a given range of forage sources to meet performance targets. |
| 8. Be able to perform routine beef stock procedures and activities . | 8.1. Perform at least four routine procedures on beef cattle taking into account relevant risk assessments.<br>8.2. Perform condition scoring on three sucker cows using the five-point scale.<br>8.3. Complete routine health and movement records in compliance with relevant legislative requirements. | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| | the learner's progression through the course | |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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| Title | Sheep Production |
| Level | Three |
| Credit Value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF362 |
| Unit Reference No | K/618/6937 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the husbandry and management of sheep production and perform routine sheep stock procedures.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
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| 1. Understand the structure of the sheep industry in Northern Ireland (NI). | 1.1. Summarise the structure of the sheep industry in NI.<br>1.2. Explain the stratification of the NI sheep industry, including how the systems interlink.<br>1.3. Summarise at least three challenges affecting the NI sheep industry.<br>1.4. Summarise the marketing trends of ewes and lambs in NI | 1.M.1 Research market trends in relation to sheep production systems in NI.<br>1.M.2 Analyse market trends identified in AC 1.M.1. | 1.D.1 Critically evaluate the potential of the NI sheep industry using a strengths, weaknesses, opportunities and threats (SWOT) analysis. |
| 2. Understand sheep production systems. | 2.1. Summarise three sheep production systems commonly used in NI<br>2.2. Summarise the main characteristics of ten sheep breeds used in NI and the suitability of each for different production systems.<br>2.3. Explain the role of cross-bred ewes and terminal sire breeds in producing prime lamb.<br>2.4. Explain the key factors that influence the choice of a sheep production system.<br>2.5. Calculate a Gross Margin for a given sheep enterprise. | 2.M.1 Evaluate the strengths and weaknesses of a given sheep production system based on the Gross Margin identified in AC 2.5. | 2.D.1 Evaluate a given sheep production system identifying unit costs against industry standards identifying at least three possible areas for improvement. |
| 3. Understand marketing criteria for sheep. | 3.1. Summarise market requirements and marketing outlets for sheep.<br>3.2. Explain the procedure for selecting finished lambs.<br>3.3. Summarise the factors that impact on sheep marketing including:<br>a) timing<br>b) carcase quality | | |

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| | c) market specifications<br>3.4. Explain the importance of export markets to the sheep industry.<br>3.5. Evaluate the reasons for price fluctuations for lamb throughout the year. | | |
| 4. Understand factors that affect lamb carcase quality and grading. | 4.1. Explain the carcase classification system used in NI for grading finished lambs.<br>4.2. Explain the factors that affect kill-out percentage in a lamb.<br>4.3. Summarise factors that may impact the carcase price received for a lamb.<br>4.4. Explain the penalty system imposed for out-of-spec lambs. | 4.M.1 Evaluate given sales data including weights, grade and fat class achieved for the class of livestock slaughtered.<br>4.M.2 Summarise possible improvements that may be made following evaluation undertaken in AC 4.M.1. | |
| 5. Understand the breeding cycle of ewes. | 5.1. Summarise the key reproductive performance targets for a sheep flock.<br>5.2. Explain the oestrus cycle of a ewe.<br>5.3. Explain the seasonality of sheep production and techniques that may be used to advance the breeding season.<br>5.4. Explain the reasons for culling.<br>5.5. Summarise how to prepare a flock of sheep for the breeding season and how this may impact on flock performance.<br>5.6. Explain the target ewe body condition score at key stages of the production cycle and how they affect fertility levels. | 5.M.1 Explain the selection of suitable male and female breeding stock for a given sheep enterprise to include the selection, sources and costs of the replacement. | 5.D.1 Evaluate the reproductive performance of a given flock against industry standards identifying possible areas for improvement. |
| 6. Understand the management of sheep health. | 6.1. Summarise the indicators of poor health in sheep and lambs.<br>6.2. Describe five common sheep diseases and disorders and the control and prevention measures for each.<br>6.3. Summarise two metabolic diseases of | 6.M.1 Explain the control measures for two specific diseases for a given sheep flock. | 6.D.1 Develop a five point action plan to minimise the development of wormer resistance. |

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| | sheep including cause, treatment and prevention.<br>6.4. Summarise at least three causes of wormer resistance in sheep flocks.<br>6.5. Explain the importance of Sustainable Control of Parasites (SCOPs) and antibiotic usage in reducing the build-up of resistance.<br>6.6. Explain ewe management during lambing.<br>6.7. Explain the importance of colostrum to a newborn lamb.<br>6.8. Summarise at least four common health problems at lambing time.<br>6.9. Explain the merits of a closed flock system.<br>6.10. Develop a health plan to include the main vaccination and dosing treatments given to ewes and lambs over a year. | | |
| 7. Understand the nutritional requirements of a flock of sheep throughout the production cycle. | 7.1. Explain the nutritional requirements to achieve optimum performance at key stages of the production cycle including:<br>a) pre-mating<br>b) mating<br>c) mid-pregnancy<br>d) late pregnancy<br>e) lambing<br>f) lactation<br>7.2. Develop a grassland management plan for a flock of ewes and lambs throughout the production cycle including:<br>a) stocking rate<br>b) grazing system<br>c) target grazing covers<br>d) addressing surpluses and shortages<br>7.3. Explain the feed requirements of the ewe during pre-lambing and lactation. | 7.M.1 Formulate and justify a ration based on given silage analysis to meet energy and protein requirements for a given group of pregnant ewes. | 7.D.1 Compare and contrast the cost, management and labour requirements of given rations.<br>7.D.2 Select with justification the preferred ration from those identified in AC 7.D.1. |

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| | 7.4. Explain the dry matter intakes, metabolisable energy (ME) and protein requirements of the pregnant ewe.<br>7.5. Develop a feeding plan for pregnant and lactating ewes based on a given silage analysis.<br>7.6. Explain the feeding options and associated costs for store lambs. | | |
| 8. Be able to perform routine sheep stock procedures safely. | 8.1. Perform at least four routine procedures on ewes, rams and lambs taking into account risk assessment.<br>8.2. Perform at least four routine sheep stock procedures associated with care of the newborn lamb taking into account risk assessment.<br>8.3. Perform condition scoring on at least three ewes or rams using the five point scale taking into account risk assessment.<br>8.4. Perform ram pre-breeding checks taking into account risk assessment.<br>8.5. Complete routine health and movement records in compliance with relevant legislative requirements. | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by | Record of observation<br>Learner notes/written work |

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| | the tutor or by learners, to enable learners to practise and apply skills and knowledge | Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Pig Production |
| Level | Three |
| Credit Value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF363 |
| Unit Reference No | M/618/6938 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the structure of the Northern Ireland pig industry and pig production systems, the production cycle, breeding and husbandry required for optimum breeding herd performance, principles of producing and rearing replacement breeding stock, nutrition, feeding regimes and methods for the breeding and feeding herds and marketing of pigs . The learner will also be able to perform routine care, husbandry and management activities.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
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| 1. Understand the structure of the pig industry and pig processing sector in Northern Ireland (NI) and the challenges faced by them. | 1.1. Summarise the following key statistics for the pig industry in NI:<br>a) number of producers<br>b) sow and pig numbers<br>c) average herd size<br>1.2. Summarise key statistics for the pig processing sector in NI:<br>a) number of abattoirs,<br>b) number and average deadweight of pigs slaughtered<br>1.3. Explain at least three challenges currently faced by the NI pig and pig processing industries. | 1.M.1 Analyse trends in producer and pig numbers, average deadweight, $P_2$ and number of pigs slaughtered over a given time period in NI. | 1.D.1 Analyse the potential of the NI pig industry using a strengths, weaknesses, opportunities and threats (SWOT) analysis. |
| 2. Understand pig production systems in NI. | 2.1. Explain the four pig production systems used within NI.<br>2.2. Explain three factors that influence the choice of a production system.<br>2.3. Explain two supply chains for pig production in NI.<br>2.4. Explain the strengths and weakness of a given production system. | 2.M.1 Evaluate a given pig production system. | |

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| 3. Understand the production cycle, breeding and husbandry required for optimum breeding herd performance. | 3.1. Summarise the breeding herd production cycle.<br>3.2. Summarise the information required to facilitate analysis of breeding herd performance.<br>3.3. Explain five physical indicators used to evaluate breeding herd performance and specify industry averages.<br>3.4. Summarise the key husbandry factors that influence the performance of the following:<br>a) dry sows<br>b) lactating sows<br>c) suckling pigs<br>3.5. Explain the husbandry of sows from weaning to service.<br>3.6. Summarise the factors that affect conception rate. | 3.M.1 Evaluate how husbandry factors can affect sow fertility and productivity at all stages of production. | 3.D.1 Evaluate the performance of a given breeding herd identifying possible areas for improvement. |
| 4. Understand the principles of producing and rearing replacement breeding stock. | 4.1. Critically compare the advantages and disadvantages of two sources of replacement gilts.<br>4.2. Summarise two breeding policies for producing replacement gilts.<br>4.3. Summarise the records and physical criteria used for the selection of replacement gilts.<br>4.4. Explain the husbandry of gilts from selection to service.<br>4.5. Explain the feeding regime of gilts from selection to service. | 4.M.1 Create a gilt replacement plan for a given pig farm identifying husbandry, targets, health and nutritional requirements. | |
| 5. Understand the production cycle and husbandry requirements for optimum feeding herd performance. | 5.1. Summarise the production cycle of a feeding herd.<br>5.2. Summarise the information required to facilitate analysis | 5.M.1 Evaluate how husbandry factors can affect growth rate and feed efficiency. | 5.D.1 Evaluate performance of a given feeding herd identifying possible areas for improvement. |

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| | of feeding herd performance.<br>5.3. Summarise three physical indicators used to evaluate feeding herd performance.<br>5.4. Summarise the key husbandry factors that affect growth rate and feed efficiency. | | |
| 6. Understand nutrition, feeding regimes and methods for breeding and feeding herds. | 6.1. Explain the nutritional requirements and feeding regimes of sows from:<br>a) weaning to service<br>b) service to farrowing<br>c) farrowing to weaning<br>6.2. Critically compare meal and pellet feeding in terms of growth rate and feed efficiency.<br>6.3. Critically compare dry and wet feeding in terms of growth rate and feed efficiency. | 6.M.1 Develop and justify feeding plans for<br>a) dry and lactating sows<br>b) growing pigs | 6.D.1 Evaluate the effect of failing to meet nutritional requirements on a given group of pigs. |
| 7. Understand the marketing of pigs and factors that affect carcase quality. | 7.1. Summarise two options for marketing pigs.<br>7.2. Explain three factors that affect the price received for finished pigs.<br>7.3. Summarise the factors that affect carcass quality.<br>7.4. Explain how the Pig Grading Information System (PIGIS) is used to assess carcass quality. | 7.M.1 Evaluate factors that influence the price received per pig for a given data set.<br>7.M.2 Critically compare the carcass quality of pigs on a given pig farm with the industry average. | 7.D.1 Use PIGIS to evaluate carcase quality identifying possible areas for improvement. |
| 8. Be able to perform routine care, husbandry and management activities. | 8.1. Carry out routine husbandry and care activities for sows, gilts and pigs.<br>8.2. Complete accurate husbandry records for given breeding and feeding herds.<br>8.3. Complete appropriate | | |

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| | records accurately as required by legislation. | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Managing Pig Health and Welfare |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF364 |
| Unit Reference No | T/618/6939 |

*Unit purpose and aim(s):* This unit will enable the learner to understand sow and pig diseases and conditions, the impact of husbandry and other control measures on pig health, importance of pig welfare and current legislation and the effect of internal and external biosecurity on pig health and welfare. The learner will also be able to evaluate the disease status of pig herds, husbandry options to improve health, performance and welfare on a specific pig farm and develop welfare protocols and a biosecurity plan.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand diseases and conditions specific to sows and pigs that impact on welfare and performance. | 1.1. Explain three reproductive diseases that affect pig herd welfare and performance<br>1.2. Explain two parasitic conditions that affect pig herd welfare and performance<br>1.3. Explain three respiratory conditions that affect pigs<br>1.4. Summarise the impact of ill health on pig herd welfare and performance | 1.M.1 Evaluate the disease status of a given pig herd. | 1.D.1 Critically compare disease levels in a given pig herd with industry averages and evaluate the impact on welfare and performance. |
| 2. Understand the impact of husbandry and other control measures on pig health. | 2.1. Explain the effect of husbandry on breeding herd health, performance and welfare.<br>2.2. Explain the effect of husbandry on growing pig health, performance and welfare.<br>2.3. Summarise other control measures for improved pig herd health.<br>2.4. Explain the importance of minimising the use of antimicrobial treatments to prevent antimicrobial resistance in pigs. | 2.M.1 Evaluate husbandry options to improve health, performance and welfare on a given pig farm. | 2.D.1 Develop and justify a health plan for a stage of production on a given pig farm. |
| 3. Understand pig welfare and current legislation. | 3.1. Summarise the importance of pig welfare to the pig business.<br>3.2. Explain six key welfare legislative | 3.M.1 Develop a welfare protocol for a given pig farm for each stage of production. | |

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| | requirements for sows, boars and gilts.<br>3.3. Explain six key welfare requirements for growing pigs. | | |
| 5. Understand the effect of internal and external biosecurity on pig health and welfare. | 4.1. Explain the importance of biosecurity on a pig farm.<br>4.2. Summarise four external and three internal biosecurity risks on a pig farm.<br>4.3. Explain the potential effect of poor biosecurity on a pig farm. | 4.M.1 Develop a biosecurity plan to minimise the risk of disease entry and spread on a given pig farm. | 4.D.1 Evaluate the consequences of failing to implement the biosecurity plan developed in AC 4.M.1 on the pig business. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Advanced Pig Management Systems |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF365 |
| Unit Reference No | K/618/6940 |

*Unit purpose and aim(s):* This unit will enable the learner to understand advanced management systems in pig production including the role of these systems in controlling the internal environment and emissions from pig housing, nutrition and feeding of sows, weaners and finishers and the benefits and impact of using advanced performance monitoring and analysis for sows and pigs.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
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| 1. Understand the importance and benefits of advanced management systems in pig production. | 1.1. Summarise the importance of advanced management systems in pig production.<br>1.2. Summarise using examples where advanced management systems can be used in pig production.<br>1.3. Summarise the benefits of using one of the advanced management systems identified in A.C.1.2 in terms of:<br>a) performance<br>b) health and welfare<br>c) labour input | | |
| 2. Understand advanced systems for controlling the internal environment and emissions from pig housing. | 2.1. Explain two advanced systems for internal environmental control and regulating emissions in pig housing.<br>2.2. Summarise the benefits of the advanced systems identified in AC 2.1 including:<br>a) health and welfare<br>b) performance<br>c) emissions | 2.M.1 Review the current systems used for controlling the internal environment and emissions on a given pig farm and recommend two advanced systems that may be implemented. | 2.D.1 Conduct a cost benefit analysis of one of the recommended systems identified in AC 2.M.1. |
| 3. Understand advanced pig nutrition and feeding systems. | 3.1. Explain two advanced techniques that can be used in pig nutrition.<br>3.2. Explain two advanced systems that can be used for feeding sows and pigs.<br>3.3. Summarise the benefits of the four advanced pig nutrition techniques and feeding systems identified in AC 3.1 and 3.2 including :<br>a) performance<br>b) health and welfare | 3.M.1 Evaluate the impact of one of the identified advanced nutrition techniques or feeding systems identified in AC 3.1 and 3.2 on a given pig farm in terms of:<br>a) health and welfare<br>b) performance | 3.D.1 Conduct a cost benefit analysis of the advanced nutrition technique or feeding system identified in AC 3.M.1. |

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| 4. Understand advanced systems for monitoring and analysing sow and pig performance. | 4.1. Summarise the benefits of using advanced systems for monitoring and analysing sow and pig performance.<br>4.2. Explain two decision support tools for advanced analysis and monitoring in terms of performance.<br>4.3. Summarise additional input data required and output information available for one decision support tool identified in AC 4.2. | 4.M.1 Evaluate the physical and financial impact of the additional information identified in AC 4.3 for a given pig farm. | 4.D.1 Evaluate the potential to improve sow and pig performance on a given farm by adopting advanced analysis and monitoring. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Grassland Production |
| Level | Three |
| Credit Value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF359 |
| Unit Reference No | M/618/6910 |

*Unit purpose and aim(s):* This unit will enable the learner to understand how to produce, utilise and conserve grass efficiently.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
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| 1. Understand the principles of grass biology, grass growth and different species characteristics. | 1.1. Explain the biology of grass growth.<br>1.2. Summarise the agronomic characteristics of three main grass species and two clover species.<br>1.3. Explain the agronomic characteristics of five main grassland weeds.<br>1.4. Explain the factors which impact on grass production. | 1.M.1 Critically compare for a given grass production system the suitability of a ryegrass only sward with a sward containing legumes. | |
| 2. Understand the principles and practices of sward improvement. | 2.1. Evaluate the composition of a given sward identifying possible areas for improvement.<br>2.2. Explain three methods of sward improvement.<br>2.3. Summarise the characteristics of different grass varieties and their suitability for sward improvement on a given site.<br>2.4. Explain how grass variety information may be used to develop suitable seed mixtures. | 2.M.1 Compare and contrast two of the sward improvement methods from AC 2.2 to include:<br>a) site<br>b) management<br>c) timings<br>d) costs | 2.D.1 Develop and justify a sward improvement plan to include method of sward improvement and seeds mixture |
| 3. Understand soil types, condition and nutrient management planning. | 3.1. Explain factors which influence the nutritional characteristics of selected soils.<br>3.2. Explain how to carry out soil sampling in order to obtain a representative sample.<br>3.3. Interpret soil analysis results and calculate the nutrient requirement for a given grassland area.<br>3.4. Quantify the organic and chemical nutrients including application timings needed to meet the nutrient | 3.M.1 Evaluate how the following can influence grass growth whilst minimising environmental impact:<br>a) slurry application to include method and timing<br>b) farmyard manure application and timing<br>c) fertiliser type and timing | 3.D.1 Develop a nutrient management plan for a given crop and field, to include rates and timing of:<br>a) organic fertilisers<br>b) inorganic fertilisers<br>c) lime applications |

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| | requirements identified in AC 3.3. | | |
| 4. Understand factors that contribute to sward deterioration and evaluate soil drainage and the effects of soil compaction. | 4.1. Explain the factors that contribute to sward deterioration.<br>4.2. Differentiate between soil compaction and poor soil drainage.<br>4.3. Distinguish between the main soil drainage systems.<br>4.4. Explain two methods for each of the following in order to alleviate:<br>a) soil compaction<br>b) poor soil drainage<br>4.5. Carry out an assessment of soil drainage and compaction in a given area. | 4.M.1 Evaluate, for a given site the most effective methods identified in AC 4.4. | 4.D.1 Develop and justify a land improvement programme for a given site to include an evaluation of the financial margins. |
| 5. Be able to evaluate grass quality and quantity. | 5.1. Explain the principles underpinning grazing ryegrass at the three leaf stage.<br>5.2. Explain how grass nutrient value changes with grass growth.<br>5.3. Explain the balance between grass quality and grass quantity.<br>5.4. Measure and record grass covers in a given area.<br>5.5. Explain grassland management options required for the following:<br>a) grass deficit<br>b) grass surplus<br>5.6. Explain grassland management tools available to aid decision making. | 5.M.1 Explain the impact of total grass yield, utilisation and quality on given animal performance.<br>5.M.2 Evaluate two management decisions in response to grass covers in AC 5.4 | 5.D.1 Produce a grass wedge for a given grazing platform and evaluate for optimisation. |
| 6. Understand grazing systems. | 6.1. Explain the following grazing systems:<br>a) set grazing<br>b) rotational grazing<br>c) zero grazing<br>6.2. Explain the advantages and disadvantages of the grazing systems identified in AC 6.1 for at least two livestock enterprises.<br>6.3. Explain the grazing infrastructure options available to improve grassland management. | 6.M.1 Compare and contrast the pre and post grazing targets required for at least two grazing systems and livestock enterprises.<br>6.M.2 Evaluate how grazing infrastructure may be used to optimise grass yield and quality. | 6.D.1 Design and justify a rotational grazing plan for a livestock group on a given area of land. |

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| 7. Understand the production and conservation principles involved in making quality grass silage. | 7.1. Explain the reasons for setting targets for silage quality and quantity.<br>7.2. Summarise the process of silage fermentation.<br>7.3. Explain the factors which influence the ability to cut grass at a set date to optimise silage quality.<br>7.4. Explain how grass sward management from autumn to spring may influence silage quality and yield.<br>7.5. Explain how harvesting techniques may influence both silage quality and quantity.<br>7.6. Summarise the processes for storing conserved grass including:<br>a) filling and sealing of silos<br>b) making round bales<br>c) effluent control<br>7.7. Summarise products which aid grass silage fermentation. | 7.M.1 Compare and contrast the suitability of different products to optimise silage fermentation under at least three ensiling conditions. | |
| 8. Understand the management of feeding grass silage. | 8.1. Explain five key parameters used to determine silage quality in a silage analysis.<br>8.2. Classify silage quality parameters in order to determine suitability for different livestock.<br>8.3. Calculate the quantity of silage available on a given farm taking into account the impact of dry matter.<br>8.4. Calculate the feed requirements for different livestock on a given farm.<br>8.5. Explain how to reduce grass silage losses when feeding. | 8.M.1 Evaluate the impact of different silage qualities on livestock performance. | 8.D.1 Develop and justify a winter feeding plan for a given group of livestock detailing daily silage requirements and supplementation as required. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| | A collection of documents containing work that shows the learner's progression through the course | |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Crop and Horticulture Production and Husbandry |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF366 |
| Unit Reference No | M/618/6941 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the principles of crop production including the crop types grown in Northern Ireland (NI), their suitability to the environment and the markets they are supplying. They will understand the skills required to establish, grow, harvest and the post-harvest management of crops

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
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| 1. Be aware of the main crop types grown in Northern Ireland and their significance. | 1.1. Summarise the main crop types grown in NI including areas and total value of each crop type.<br>1.2. Explain the reasons why the crop types identified in A.C 1.1 are grown in NI.<br>1.3. Explain the end uses of the main crop types identified in A.C 1.1. | 1.M.1 Review changes over a given time period for one crop grown in NI to include areas, values and markets. | 1.D.1 Analyse factors that have driven the changes for the crop reviewed in A.C 1.M.1.<br>1.D.2 Evaluate the future potential for the crop identified in AC 1.D.1. |
| 2. Understand the main markets, supply chains and specifications for crops grown in NI. | 2.1. Explain the main markets for three crops grown in NI.<br>2.2. Explain the supply chain for one crop identified in AC 2.1.<br>2.3. Explain three specifications used to assess quality for the supply chain identified in AC 2.2. | 2.M.1 Evaluate the implications of failing to meet specifications on end use for the crop identified in AC 2.2. | |
| 3. Understand the requirements for successful crop establishment and growth. | 3.1. Explain the importance of environmental conditions on successful crop establishment and growth.<br>3.2. Explain four growing medium requirements for successful establishment and growth of a crop.<br>3.3. Explain at least three key steps in establishing a given crop. | 3.M.1 Evaluate the role of successful crop establishment on optimising crop output. | 3.D.1 Evaluate three management practices that can be implemented to improve growing medium conditions for the successful establishment and growth of a given crop. |
| 4. Understand the harvest and post-harvest management of crops. | 4.1. Explain, for three given crops, the different stages in their life cycle at which they can be harvested.<br>4.2. Summarise the indicators of harvest readiness for one of | 4.M.1 Summarise the agronomic or business factors that influence time of harvest for the crop identified in AC 4.1. | |

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| | the three crops identified in AC 4.1.<br>4.3. Summarise the post-harvest management of one of the three crops identified in AC 4.1.<br>4.4. Explain the impact of the supply chain on the post-harvest management of one of the crops identified in AC 4.1. | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Integrated Pest Management |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF367 |
| Unit Reference No | T/618/6942 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the principles of Integrated Pest Management (IPM) in crops and its potential impact on decision making relating to interventions in weed, pest and disease control and prevention. Learners will also understand the importance of using economic thresholds for treatment interventions and the use of cultural controls and interactions between the natural ecosystem and the agroecosystem.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the principles and processes involved in IPM. | 1.1. Explain the principles of IPM.<br>1.2. Summarise the steps in the crop protection decision-making pyramid.<br>1.3. Explain why the IPM decision process is continuous.<br>1.4. Explain how evaluation of an action is a key part of the IPM process. | 1.M.1 Analyse factors that have influenced the development of IPM principles. | 1.D.1 Compare and contrast the application of IPM principles with conventional pest management in terms of environmental, financial and management decisions. |
| 2. Understand pest management control measures for crop protection within an IPM Programme. | 2.1. Summarise two management pest control measures for identified crops for each of the following<br>a) preventative<br>b) mechanical<br>c) biological<br>2.2. Explain how Plant Protection Products (PPP)s can be used within an IPM programme. | 2.M.1 Evaluate, with at least two examples, how enhancing biodiversity may impact on pest management . | |
| 3. Understand the application of Economic Injury Levels and Economic Treatment Thresholds. | 3.1. Explain what is meant by the following terms in relation to crop protection:<br>a) Economic Treatment Threshold<br>b) Economic Injury Level<br>3.2. Explain how monitoring pest populations | 3.M.1 Analyse the interrelationship between Economic Treatment Threshold and Economic Injury Level for a given crop pest. | |

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| | impacts on treatment decisions.<br>3.3. Explain how environmental considerations may impact on the treatment of a crop pest. | | |
| 4. Understand the role of IPM in PPP resistance management. | 4.1. Explain what is meant by PPP resistance and its impact for a selected cropping enterprise.<br>4.2. Summarise three factors that contribute to the development of pest resistance to PPPs.<br>4.3. Explain how the use of an IPM approach can reduce the probability of PPP resistance. | 4.M.1 Explain how resistance to PPPs has developed for a given crop pest. | 4.D.1 Develop with justification an IPM plan to minimise the impact of the resistant pest identified in AC 4.M.1. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Specialist Machinery Operations |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF368 |
| Unit Reference No | A/618/6943 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the purpose and operation of machinery specific to an arable or horticultural crop.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the purpose, operation and maintenance of growing medium preparation equipment. | 1.1. Explain the purpose of machinery used in the preparation of growing medium for a given crop.<br>1.2. Summarise the working principles and operation of three different types of cultivators.<br>1.3. Explain the significance of consolidation in growing medium preparation.<br>1.4. Explain maintenance tasks that should be undertaken on the three cultivators detailed in AC 1.2. | 1.M.1 Critically evaluate the suitability of two given cultivators for a given crop. | 1.D.1 Develop a cultivation plan to establish a seed bed for a given crop. |
| 2. Understand the purpose, operation and maintenance of planting equipment. | 2.1. Explain the purpose of machinery used in the planting of a given crop.<br>2.2. Summarise the working principles and operation of two different types of planting equipment for a given crop.<br>2.3. Explain the importance of calibration of planting equipment.<br>2.4. Explain maintenance tasks that should be undertaken on the planting equipment detailed in AC 2.2. | 2.M.1 Critically evaluate the suitability of two given items of planting equipment for a given situation. | |
| 3. Understand the purpose, operation and maintenance of Plant Protection Product (PPP) and fertiliser application equipment. | 3.1. Explain the purpose and working principles of two types of PPP spray application equipment. | 3.M.1 Critically evaluate the suitability of two nozzle types for a given situation. | 3.D.1 Evaluate, for a given item of spray or fertiliser application equipment, the potential of new technology to improve |

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| | 3.2. Explain the importance of maintenance and calibration of a crop sprayer.<br>3.3. Explain the purpose and working principles of two types of fertiliser application equipment.<br>3.4. Explain the importance of maintenance and calibration of fertiliser application equipment. | | accuracy of application. |
| 4. Understand the purpose, operation and maintenance of harvesting and post-harvest handling equipment. | 4.1. Explain the purpose of a chosen crop harvester.<br>4.2. Explain the working principles and operation of the harvester chosen in AC.4.1.<br>4.3. Explain the purpose of a given type of crop handling equipment used for post-harvest of a given crop.<br>4.4. Explain the working principles and operation of the crop handling equipment in AC 4.3.<br>4.5. Explain the importance of maintenance of the harvester identified in AC 4.1. | 4.M.1 Evaluate how settings for a given item of harvesting or crop handling equipment can be adjusted to optimise crop quality and efficiency. | 4.D.1 For a given crop, develop a plan including targets, to monitor harvester performance in order to increase efficiency and improve crop quality. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and | Record of observation<br>Learner notes/written work |

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| | demonstrate the skills and/or knowledge gained throughout the course | Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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| Title | Harvesting and Storage of Horticultural Crops |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF373 |
| Unit Reference No | R/618/6950 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the practical aspects of harvesting, pre harvest treatments, assessment of harvest timing, harvesting methods, minimising losses and damage, sampling procedures, storage and meeting market requirements.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the pre-harvest management factors that impact on the harvesting of crops. | 1.1. Summarise the differences between physiological and horticultural maturity.<br>1.2. Summarise the parameters indicating suitability of two different horticultural crops for harvesting to meet market specifications.<br>1.3. Summarise three production factors that can affect horticulture crop quality.<br>1.4. Explain three risks associated with the delayed harvest of a horticultural crop.<br>1.5. Explain the terms maturation, ripening and senescence of a fresh produce horticultural crop. | 1.M.1 Evaluate the influence of the end market on pre-harvest management of a given horticultural crop. | |
| 2. Understand the harvesting, collection and packaging processes for horticultural crops. | 2.1. Summarise the equipment used in the harvesting, collection, weighing and grading of a given horticultural crop.<br>2.2. Explain importance of good hygiene practices when harvesting fresh produce and the potential impact on human health.<br>2.3. Summarise three packaging options for in-field packing of a given horticultural crop. | 2.M.1 Evaluate three management practices that may be implemented at harvest to minimise microbial contamination. | 2.D.1 Develop a harvesting plan to minimise damage and microbial contamination to a given horticultural crop during harvesting. |

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| 3. Understand the post-harvest treatment of horticultural crops in preparation for storage. | 3.1. Explain the importance of assessing crop quality prior to storage.<br>3.2. Explain the importance of maintaining strict post-harvest hygiene for fresh produce.<br>3.3. Summarise the process of curing root vegetables to maintain quality. | 3.M.1 Evaluate options that may be implemented post-harvest to maintain hygiene in a given fresh product. | |
| 4. Understand the storage and packaging of horticultural crops. | 4.1. Explain two purposes of storage for horticultural crops.<br>4.2. Summarise health and safety considerations when preparing, loading and monitoring stores.<br>4.3. Explain three checks which should be carried out on a store prior to use.<br>4.4. Explain the differences between controlled atmosphere (CA) and modified atmosphere (MA) packaging.<br>4.5. Explain the importance of temperature and humidity on the storage of horticulture crops.<br>4.6. Explain how a store pest and a spoilage disease should be monitored in a stored crop. | 4.M.1 Evaluate the storage methods for a given horticultural crop, selecting and justifying preferred option.<br>4.M.2 Evaluate renewable packaging options for a given horticultural crop. | 4.D.1 Develop a store management plan for a given horticultural crop in order to maintain crop quality for a market including the following:<br>a) pre and post-harvest operations<br>b) monitoring during storage |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Combinable Crop Production |
| Level | Three |
| Credit value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF369 |
| Unit Reference No | F/618/6944 |

*Unit purpose and aim(s):* This unit aims to enable the learner to understand the principles of combinable crop production from crop selection, siting and establishment to practical management of combinable crops up to the point of harvest.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the principles of crop rotations in combinable crops including Gross Margins. | 1.1. Explain the purpose of crop rotation including three benefits for crop production.<br>1.2. Summarise the importance of having at least three different crop types in a rotation.<br>1.3. Explain the role of catch crops in a rotation.<br>1.4. Explain two suitable crop rotations.<br>1.5. Produce Calculate a Gross Margin for two specified combinable crops. | 1.M.1 Analyse the interactions of the crops in one of the crop rotations identified in AC 1.4. | 1.D.1 Compare and contrast the Gross Margins produced in AC 1.5 identifying three potential areas for improvement. |
| 2. Understand the factors involved in cultivar selection of combinable crops in Northern Ireland (NI). | 2.1. Explain how NI growing conditions will influence cultivar choice for combinable crops.<br>2.2. Explain how market requirements can influence cultivar selection of two combinable crops.<br>2.3. Justify, giving three reasons, the selection of a variety for a given crop.<br>2.4. Explain seed classification for a selected crop. | 2.M.1 Explain, for a selected crop, the advantages and disadvantages of using hybrid cultivars. | 2.D.1 Evaluate the potential use of alternative breeding techniques in combinable crop production. |
| 3. Understand the process of producing a Nutrient Management and Lodging Control plan for combinable crops. | 3.1. Summarise methods of assessing crop nutritional needs.<br>3.2. Explain how to access information required to produce a crop nutrient plan. | 3.M.1 Evaluate the role of leaf tissue and grain analysis in the nutritional management of combinable crops. | 3.D.1 Develop a nutrient management plan for a specified crop and field, to include rates and timing of organic, inorganic fertilisers and lime applications. |

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| | 3.3. Interpret the results of a soil analysis.<br>3.4. Explain the causes and controls of lodging which affect combinable crops. | | |
| 4. Understand the impact of site selection in growing combinable crops in NI. | 4.1. Explain how field location can influence crop choice and management.<br>4.2. Explain how soil type can influence crop choice and management.<br>4.3. Explain how topography, aspect and altitude can affect crop management and growth.<br>4.4. Summarise how NI farm structures impact on crop management. | 4.M.1 Analyse how geography and climate has influenced the development of the combinable crops sector in NI. | |
| 5. Understand the methods associated with crop establishment and appropriate measures. | 5.1. Summarise three establishment methods of a combinable crop.<br>5.2. Summarise three measures of seed quality for a given combinable crop.<br>5.3. Explain how the planting date impacts decision making for establishing combinable crops<br>5.4. Calculate the seed rate for a given combinable crop. | 5.M.1 Compare and contrast the crop establishment methods identified in AC 5.1 indicating your preferred option including:<br>a) costs<br>b) suitability for NI conditions<br>c) timeliness<br>d) labour | 5.D.1 Evaluate, for the establishment method selected in AC 5.M.1, its long term impact on environment, soil health, weed and pest control. |
| 6. Understand the assessment of crop establishment and growth. | 6.1. Explain how combinable crop establishment can be assessed post emergence.<br>6.2. Explain the key components of yield formation in a combinable crop.<br>6.3. Summarise three key performance targets in optimising yield for a given combinable crop<br>6.4. Explain how growth stage is assessed | 6.M.1 Evaluate the use of canopy management as a benchmark to aid combinable crop management for the crop identified in AC 6.3. | |

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| | for a chosen combinable crop. | | |
| 7. Understand the management of combinable crop disease. | 7.1. Explain the impact of three diseases for a selected combinable crop.<br>7.2. Develop a control plan for one disease identified in AC 7.1.<br>7.3. Explain the importance of timing in the treatment of the disease identified in AC 7.2. | 7.M.1 Justify the control plan and any fungicides suggested in AC 7.2. | |
| 8. Understand the management of combinable crop pests. | 8.1. Explain the impact of three main pests for a selected combinable crop.<br>8.2. Develop a control plan for one pest identified in AC 8.1.<br>8.3. Explain the importance of timing in the treatment of the pest identified in AC 8.2. | 8.M.1 Justify the control plan and methods used in AC 8.2 | |
| 9. Understand the management of weeds in combinable crops. | 9.1. Explain the impact of three main weeds on a selected combinable crop.<br>9.2. Develop a control plan for one weed identified in AC 9.1.<br>9.3. Explain the importance of timing in treatment of the weed identified in AC 9.2. | 9.M.1 Justify the control plan and methods used in AC 9.2. | |
| 10. Be able to undertake key assessment and calculations associated with combinable crop production. | 10.1. Demonstrate the identification of the following in relation to combinable crops:<br>a) four weeds<br>b) four diseases<br>c) four pests<br>10.2. Demonstrate the identification of three key growth stages of one cereal and one non-cereal combinable crop.<br>10.3. Demonstrate a plant and tiller count on a given combinable crop. | | |

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| | 10.4. Demonstrate a Thousand Grain Weight calculation for seed of a given combinable crop. | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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| Title | Potato Production |
| Level | Three |
| Credit value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF370 |
| Unit Reference No | R/618/6947 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the principles of potato crop production from crop selection, siting and establishment to practical management of potato crops up to the point of harvest. It also provides the learner with practical skills associated with potato crop production.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
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| 1. Understand crop rotations in potato production including financial considerations. | 1.1. Explain the purpose of a crop rotation and three associated benefits.<br>1.2. Summarise the factors affecting the frequency of potato crops in a rotation.<br>1.3. Explain the role of catch crops in a rotation.<br>1.4. Calculate Gross Margins for both an early crop and a main crop. | 1.M.1 Justify the need to control potato volunteers in a potato rotation. | 1.D.1 Compare and contrast the Gross Margins calculated in AC 1.4 identifying three possible areas for improvement. |
| 2. Understand the factors involved in cultivar selection of potato crops. | 2.1. Explain how Northern Ireland (NI) growing conditions influence cultivar choice for potato crops.<br>2.2. Explain how market requirements influence cultivar selection of potato crops.<br>2.3. Justify, giving three reasons, the selection of a potato variety for a given market.<br>2.4. Explain seed classification for potatoes. | | |
| 3. Understand how to plan the nutrient management of a potato crop. | 3.1. Summarise methods for assessing crop nutritional needs.<br>3.2. Explain how to access information to develop a crop nutrient plan.<br>3.3. Interpret the results of a given soil analysis.<br>3.4. Explain the role of nutrition in crop senescence. | 3.M.1 Evaluate the role of leaf petiole analysis in the nutritional management of potato crops.<br>3.M.2 Summarise the impact of crop nutrition on tuber quality. | 3.D.1 Develop a nutrient management plan for a given potato crop and field, including rates and timing of organic and inorganic fertilisers and lime applications. |
| 4. Understand site selection in growing potato crops. | 4.1. Explain how field location can influence potato crop choice and management. | 4.M.1 Analyse how geography and climate have | |

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| | | 4.2. Explain how soil type can influence potato crop type and management.<br>4.3. Explain how topography and aspect can affect potato crop management and growth.<br>4.4. Summarise at least three factors affecting availability of suitable sites for potato production in NI. | | influenced the development of the potato sector in NI. | | |
| 5. | Understand seed management and establishment of potato crops. | 5.1. Summarise four factors which can affect seed potato quality.<br>5.2. Summarise the role of physiological ageing of seed in potato production.<br>5.3. Explain three operations which form part of potato crop establishment.<br>5.4. Calculate seed rate for a given potato crop.<br>5.5. Explain how planting date will influence decision making for establishing potato crops. | 5.M.1 | Explain differences between physiological and chronological ageing of seed potatoes. | 5.D.1 | Develop a seed management programme for a given potato crop including seed specification and post-delivery management. |
| 6. | Understand the assessment of potato crop establishment and growth. | 6.1. Explain how potato crop establishment can be assessed post emergence.<br>6.2. Explain the key components of yield formation in potato crops.<br>6.3. Summarise three key performance targets in optimising yield of a potato crop.<br>6.4. Explain how growth stage is assessed for a potato crop. | 6.M.1 | Explain how development of vegetative growth can influence yield. | | |
| 7. | Understand the management of diseases of potato crops. | 7.1. Explain the impact of three diseases on a potato crop.<br>7.2. Develop a control plan one of the diseases identified in AC 7.1.<br>7.3. Explain the importance of timing in the treatment of the control plan identified in AC 7.2. | 7.M.1 | Justify the control plan and methods used in AC.7.2. | 7.D.1 | Evaluate the importance of monitoring disease pressure and blight population in developing a blight control strategy. |
| 8. | Understand the management of pests of potato crops. | 8.1. Explain the impact of three main pests on a potato crop.<br>8.2. Develop a control plan for one pest identified in AC 8.1.<br>8.3. Explain the importance of timing in the treatment of | 8.M.1 | Justify the control plan and methods used in AC.8.2. | | |

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| | the pest identified in AC 8.2. | | |
| 9. Understand the management of weeds in potato crops. | 9.1. Explain the impact of three main weeds on a potato crop.<br>9.2. Develop a treatment plan for weed control in a potato crop.<br>9.3. Explain the importance of treatment timing in the control plan identified in AC 9.2. | 9.M.1 Justify the treatment plan and methods used in AC.9.2. | |
| 10. Be able to carry out the practical skills associated with potato production. | 10.1. Carry out the following practical skills associated with potato crop production:<br>a) identification of four weeds<br>b) identification of four diseases<br>c) identification of four pests<br>d) a trial dig to assess potato crop yield and size<br>e) a 50kg tuber count for a sample of seed potatoes<br>f) a damage assessment on a sample of harvested potatoes | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Harvesting and Storage of Combinable Crops |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF371 |
| Unit Reference No | Y/618/6948 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the practical aspects of harvesting taking account of pre harvest treatments, assessment of harvest timing, harvesting methods, minimising losses and damage, sampling procedures, meeting market requirements. The learner will also understand the storage requirements of combinable crops, storage methods, store preparation, pest control, monitoring in store.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the assessment of crops for harvest and any in field pre-harvest treatments required. | 1.1. Explain, for a given crop the procedure for assessing harvest readiness.<br>1.2. Explain three risks associated with delayed harvest of a combinable crop.<br>1.3. Explain the role of pre-harvest desiccation in Northern Ireland (NI) conditions.<br>1.4. Explain how the end market may influence pre-harvest management of crops. | | |
| 2. Understand the harvesting of combinable crops. | 2.1. Summarise factors affecting the efficient harvesting of combinable crops on NI arable farms including:<br>a) soil conditions<br>b) hygiene<br>c) appropriate timing<br>2.2. Explain the assessment of grain loss during harvest of combinable crops.<br>2.3. Explain two methods of dealing with crop residues. | 2.M.1 Explain the importance of machinery hygiene during the harvest process. | 2.D.1 Develop a harvesting plan for a given farm to minimise spread of weeds, pest and diseases. |
| 3. Understand the post-harvest treatment of combinable crops in readiness for storage. | 3.1. Explain the importance of assessing grain quality prior to storage.<br>3.2. Explain three methods of grain preservation, including target moisture content.<br>3.3. Explain three techniques used to dry grain.<br>3.4. Summarise how and why drying parameters may be different depending on crop and end use. | 3.M.1 Evaluate three drying techniques identified in AC 3.3 for a given type of grain. | 3.D.1 Summarise for a given farm, factors to be considered when prioritising crops for drying. |

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| 4. Understand the storage of combinable crops. | 4.1. Summarise health and safety considerations when preparing, loading and monitoring stores.<br>4.2. Explain three key checks that should be carried out on a grain store prior to use.<br>4.3. Identify three grain store pests and explain their impact on the stored crop.<br>4.4. Summarise two indicators of spoilage in a stored crop and how they should be monitored.<br>4.5. Summarise three grain store records required for appropriate Quality Assurance Schemes. | 4.M.1 Develop a control plan for one of the pests identified in AC 4.3 using Integrated Pest Management (IPM) principles. | 4.D.1 Develop a store management plan to maintain crop quality for a given market, to include pre and post-harvest operations and monitoring during storage. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |

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| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Harvesting and Storage of Potato Crops |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF372 |
| Unit Reference No | D/618/6949 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the practical aspects of harvesting, pre-harvest treatments, assessment of harvest timing, harvesting methods, minimising losses and damage, sampling procedures, storage and meeting market requirements.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the assessment of potato crops for harvest and pre-harvest treatments. | 1.1. Explain the procedure for assessing harvest readiness of a potato crop.<br>1.2. Explain three risks associated with delayed harvest of a potato crop.<br>1.3. Explain the role of pre-harvest desiccation or defoliation.<br>1.4. Explain how the end-market may influence the management of pre-harvest treatment of a potato crop. | | |
| 2. Understand the harvesting of potato crops. | 2.1. Summarise factors affecting the efficient harvesting of potato crops on NI arable farms including:<br>a) soil conditions<br>b) hygiene<br>c) timeliness<br>2.2. Explain two processes which take place when harvesting a potato crop.<br>2.3. Explain how to assess damage during the harvest of potato crops.<br>2.4. Evaluate when damage is likely to occur in the harvesting process how this may be identified. | 2.M.1 Explain the importance of machinery hygiene during the harvesting process. | 2.D.1 Develop a harvesting plan for a given farm to minimise spread of weeds, pests and diseases. |
| 3. Understand the post-harvest treatment of potato crops and storage options. | 3.1. Explain the following post-harvest processes:<br>a) drying<br>b) curing<br>c) cooling<br>3.2. Explain two key factors to be considered when grading a potato crop | 3.M.1 Critically compare two types of box store ventilation. | |

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| | and the importance of assessing tuber condition prior to storage.<br>3.3. Explain three types of stores used for potatoes.<br>3.4. Clarify how and why storage parameters may be different depending on the crop and end use. | | |
| 4. Understand the management of potato store facilities. | 4.1. Summarise health and safety considerations when preparing, loading and monitoring potato stores.<br>4.2. Explain three checks which should be carried out on a potato store prior to use.<br>4.3. Identify three storage diseases of potatoes and explain their possible impact on the stored crop.<br>4.4. Summarise two key parameters which should be monitored in a stored potato crop<br>4.5. Summarise three store records required for relevant Quality Assurance Schemes. | 4.M.1 Explain the potential impact of condensation on stored potatoes, and how it may be reduced.<br>4.M.2 Develop a control plan for one of the storage diseases identified in AC 4.3 using Integrated Pest Management (IPM) principles. | 4.D.1 Develop a store management plan to maintain crop quality for a given market, to include pre and post-harvest operations. |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |

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| | and/or knowledge gained throughout the course | |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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| Title | Ornamental Crop Production |
| Level | Three |
| Credit value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF374 |
| Unit Reference No | Y/618/6951 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the principles of ornamental crop production from crop selection, siting and establishment to practical management of crops up to the point of harvest. The learner will also gain practical skills associated with ornamental crop production.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand site selection and growing media for ornamental crops and container grown plants. | 1.1. Explain how soil and growing media can influence crop growth and management.<br>1.2. Explain how topography and aspect can affect crop management and growth in field grown ornamentals.<br>1.3. Summarise the physical and chemical characteristics required in a growing media and soil.<br>1.4. Explain the reasons for nurseries to use reduced and peat free growing media. | 1.M.1 Analyse options to improve soil conditions and influence local environmental conditions prior to crop establishment and later growth.<br>1.M.2 Evaluate the physical and chemical characteristics of two non-peat ingredients that can be used in a reduced peat mix. | 1.D.1 Compare and contrast the economic, technical and marketing differences between field and containerised production. |
| 2. Understand structures and equipment used in protected ornamental crop production. | 2.1. Summarise the characteristics of four structures commonly used in ornamental crop production.<br>2.2. Summarise equipment used by growers to optimise the growing environment in one of the structures identified in AC 2.1.<br>2.3. Summarise environmental controls and monitoring equipment | 2.M.1 Compare and contrast two structures used in protected ornamental crop production and identify the recommended crops for each. | |

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| | available to growers in one of the structures identified in AC 2.1. | | |
| 3. Understand the principles of propagation for ornamental crops. | 3.1. Explain the terms vegetative propagation and seed propagation and the benefits associated with each.<br>3.2. Explain the physiological processes and associated environmental conditions required for vegetative and seed propagation.<br>3.3. Summarise treatments and equipment used in seed and vegetative propagation. | 3.M.1 Develop a propagation schedule for a selected ornamental crop including:<br>a) timings<br>b) treatments<br>c) environmental conditions | |
| 4. Understand how water quality and irrigation techniques can influence plant growth and quality in ornamental crop production. | 4.1. Summarise the importance of water quality in container-grown ornamental crops.<br>4.2. Explain the impact of electro-conductivity (EC) on plant growth.<br>4.3. Explain the relationship between growing media pH and alkalinity.<br>4.4. Summarise three options to improve water quality.<br>4.5. Summarise three irrigation techniques used in container grown plants.<br>4.6. Summarise two irrigation techniques used in soil-grown ornamental crops. | 4.M.1 Evaluate two options to track changes in growing media pH and EC including equipment and sampling technique. | 4.D.1 Evaluate current irrigation techniques used on a given nursery identifying possible areas for improvement. |
| 5. Understand crop nutrition management. | 5.1. Summarise methods of assessing crop nutritional needs.<br>5.2. Explain the information sources available | 5.M.1 Evaluate the role of leaf tissue in the nutritional management of a given crop. | 5.D.1 Develop a nutrient management plan for a given crop and field or growing media including rates and timing of |

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| | to develop a crop nutrient plan.<br>5.3. Interpret the results of a soil growing media analysis.<br>5.4. Explain the impact of soil or growing media pH on the nutritional status of ornamental crops. | | the following where applicable<br>a) organic fertilisers<br>b) inorganic fertilisers<br>c) lime applications |
| 6. Understand diseases in ornamental crops. | 6.1. Summarise the symptoms and impact of three diseases for a given crop.<br>6.2. Summarise the key aspects of a control plan for one of the diseases identified in AC 6.1.<br>6.3. Explain the importance of timing in the treatment of the disease identified in AC 6.2.<br>6.4. Explain what is meant by the term Resistance in disease control. | 6.M.1 Explain for one given disease of a crop how it may become resistant to treatment. | 6.D.1 Evaluate a strategy to manage resistance build-up to the disease identified in AC 6.M.1. |
| 7. Understand pests in ornamental crops. | 7.1. Explain the effects of three main pests on crops.<br>7.2. Summarise the key aspects of a treatment plan for one pest identified in AC 7.1.<br>7.3. Explain the importance on timing in the treatment of the pest identified in AC 7.2.<br>7.4. Explain what is meant by the term Resistance in pest control. | 7.M.1 Explain for one given pest of an ornamental crop how it may become resistant to treatment. | 7.D.1 Evaluate a strategy to manage resistance build-up in the pest identified in AC 7.M.1, evaluate a strategy to manage resistance build-up. |
| 8. Understand weeds in ornamental crops. | 8.1. Explain the effects of two main weeds on crops.<br>8.2. Summarise the key aspects of a treatment plan for one weed identified in AC 8.1. | 8.M.1 Explain, for one given weed of an ornamental crop, how it may become resistant to treatment. | 8.D.1 Evaluate a strategy to manage resistance build-up in one of the weeds identified in AC 8.M.1. |

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| | 8.3. Explain the importance on timing in the treatment of the weed identified in AC 8.2.<br>8.4. Explain what is meant by the term Resistance in weed control. | | |
| 9. Be able to carry out activities associated with ornamental crop production. | 9.1. Undertake the identification of the following in relation to ornamental crops:<br>a) four weeds<br>b) four diseases<br>c) four pests<br>9.2. Calibrate a water-driven nutrient dosing machine. | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Soft Fruit Production |
| Level | Three |
| Credit value | 20 |
| Guided Learning Hours (GLH) | 120 |
| OCN NI Unit Code | CBF375 |
| Unit Reference No | H/618/6953 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the principles of soft fruit production from crop selection, siting and establishment to practical management of crops up to the point of harvest. The learner will also perform practical skills associated with soft fruit production.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand site and growing medium selection in soft fruit. | 1.1. Explain how soil and growing media can influence crop growth and the management of soft fruit.<br>1.2. Explain how topography and aspect can affect crop management and growth in field grown soft fruit.<br>1.3. Summarise the physical and chemical characteristics required in a growing medium for soft fruit.<br>1.4. Explain the reasons behind increased use of reduced and peat free growing media.<br>1.5. Explain the purpose of a crop rotation and three associated benefits for crop production in field grown crops. | 1.M.1 Analyse options to improve soil conditions and local environmental conditions prior to crop establishment and later growth.<br>1.M.2 Evaluate the physical and chemical characteristics of two non-peat ingredients that may be used in a reduced peat mix. | 1.D.1 Evaluate current use of renewable soil ameliorants or use of peat alternatives in growing media mixes and make recommendations for alternatives to meet guidelines. |
| 2. Understand structures and equipment used in soft fruit crop production. | 2.1. Summarise three support structures used in soft fruit production.<br>2.2. Summarise three protected structures used in soft fruit production.<br>2.3. Summarise equipment used by growers to optimise the growing environment in one of the protected structures identified in AC2.2.<br>2.4. Summarise the environmental controls and monitoring equipment that may be used in one of the protected structures identified in AC2.2. | 2.M.1 Compare and contrast two structures used in the production of a given soft fruit crop. | |
| 3. Understand establishment and crop maintenance in soft fruit production. | 3.1. Summarise the type of propagation material available for a given crop.<br>3.2. Explain how cropping strategy and market can | 3.M.1 Develop a cropping schedule for a given soft | |

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| | influence choice of cultivar and propagation material.<br>3.3. Summarise the main strategies taken to establish the given crop identified in AC 3.1 in soil or containers.<br>3.4. Summarise the pruning requirements for given crop to maintain plant health and improve productivity.<br>3.5. Summarise the pollination requirements for a given crop and options to ensure pollination. | fruit crop to include:<br>a) timings<br>b) treatments<br>c) environmental conditions | |
| 4. Understand how water quality and irrigation techniques can impact on plant growth and quality in soft fruit crop production. | 4.1. Summarise the importance of water quality in soft fruit production.<br>4.2. Explain the impact of electro-conductivity (EC) on plant growth.<br>4.3. Explain the relationship between growing media pH and alkalinity.<br>4.4. Summarise three options to improve water quality.<br>4.5. Summarise three irrigation techniques used in container grown soft fruit crops.<br>4.6. Summarise two irrigation techniques used in soil grown soft fruit crops.<br>4.7. Evaluate options to monitor moisture levels on soils and growing media. | 4.M.1 Evaluate two options to track changes in growing media pH and EC including equipment and sampling techniques.<br>4.M.2 Evaluate two techniques to establish the uniformity of irrigation in a given crop or cropping environment. | 4.D.1 Evaluate irrigation techniques used in a given nursery identifying possible areas for improvement. |
| 5. Understand the factors involved in cultivar selection of soft fruit crops in Northern Ireland (NI). | 5.1. Explain how cultivar selection is critical in season extension.<br>5.2. Explain how market requirements can influence cultivar selection of soft fruit.<br>5.3. Explain how disease pressures can influence cultivar selection.<br>5.4. Justify giving two reasons the selection of a variety for a given crop. | 5.M.1 Explain the potential of hybrid berries in NI including:<br>a) market potential<br>b) ease of cultivation<br>c) yield<br>d) diseases | |
| 6. Understand how to plan the nutrition management for soft fruit crops. | 6.1. Summarise methods of assessing crop nutritional needs.<br>6.2. Explain how to access information to develop a crop nutrient plan.<br>6.3. Interpret the results of a given soil growing media analysis.<br>6.4. Explain the impact of soil or growing media pH on the nutritional status in soft fruit. | 6.M.1 Evaluate the role of leaf tissue in the nutritional management of a given soft fruit. | 6.D.1 Develop a nutrient management plan for a given crop and given field or growing media including rates and timing of organic, inorganic fertilisers and lime applications. |

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| 7. Understand the management of diseases in soft fruit crops. | 7.1. Summarise the symptoms and impact of three diseases for a given crop.<br>7.2. Develop a control plan for one of the diseases identified in A.C.7.1.<br>7.3. Explain the importance of timing in the treatment of the disease identified in AC 7.2.<br>7.4. Explain what is meant by resistance in disease control. | 7.M.1 Explain how one given soft fruit crop disease identified in AC 7.1 may become resistant to treatment. | 7.D.1 Analyse a strategy to manage resistance build up of the soft fruit crop disease identified in AC 7.M.1. |
| 8. Understand the management of pests of soft fruit crops. | 8.1. Explain the impacts of three main pests on a soft fruit crop.<br>8.2. Develop a treatment plan for one pest identified in AC 8.1.<br>8.3. Explain the importance of timing in the treatment of the pest identified in AC 8.2.<br>8.4. Explain what is meant by the term resistance in pest control. | 8.M.1 Explain how one given soft fruit crop pest identified in AC 8.1 may become resistant to treatment. | 8.D.1 Analyse a strategy to manage resistance build-up of the soft fruit crop pest identified in AC 8.M.1. |
| 9. Understand the management of weeds in soft fruit crops. | 9.1. Explain the impact of two main weeds on soft fruit crops.<br>9.2. Develop a treatment plan for one weed identified in AC.9.1.<br>9.3. Explain the importance of timing in the treatment of the weed identified in AC.9.2.<br>9.4. Explain what is meant by the term “resistance ” in weed control. | 9.M.1 Explain how one given soft fruit crop weed identified in AC 9.1 may become resistant to treatment. | 9.D.1 Analyse a strategy to manage resistance build up of the soft fruit crop weed identified in AC 9.M.1. |
| 10. Be able to carry out the practical skills associated with soft fruit production. | 10.1. Carry out the following practical skills associated with soft fruit production:<br>a) identification of four weeds<br>b) identification of four diseases<br>c) identification of four pests<br>d) calibration of a water driven nutrient dosing machine | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| | A collection of documents containing work that shows the learner's progression through the course | |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Human Resource Management |
| Level | Three |
| Credit value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF376 |
| Unit Reference No | K/618/6954 |

*Unit purpose and aim(s):* This unit will enable the learner to understand human resource management within a land-based business.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand human resource management for a land-based business. | 1.1. Explain why human resource planning is important to a land-based business including internal and external factors.<br>1.2. Summarise four legal responsibilities of an employer to their employees including health, safety and welfare.<br>1.3. Summarise recruitment and selection. procedures for a given land-based business<br>1.4. Summarise the content of contract of employment. | 1.M.1 Evaluate how employment legislation may impact on a land-based business. | 1.D.1 Develop an employee employment contract for a given land-based business. |
| 2. Be able to plan for labour requirements within a land-based business. | 2.1. Summarise the labour and skill requirements within a given land-based business.<br>2.2. Explain at least two labour saving options within a given land-based business.<br>2.3. Summarise how to plan the labour requirement efficiently within a given land-based business.<br>2.4. Explain how to plan employee resource in order to meet workload requirement.<br>2.5. Summarise the training and development requirements for | 2.M.1 Develop a labour management plan to include:<br>a) labour saving options<br>b) work-load planning<br>c) employee resource planning | 2.D.1 Create, implement and evaluate a training and development plan for a group of employees in a given land-based business. |

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| | employees in a given land-based business.<br>2.6. Develop a Standard Operating Procedure for a specific task in a given land-based business. | | |
| 3. Understand how to promote employee motivation, teamwork, problem solving and conflict resolution. | 3.1. Develop a communication plan for a given land-based business.<br>3.2. Explain factors that can impact on employees' motivation in a land-based business.<br>3.3. Explain two approaches to encourage teamwork, problem solving and conflict resolution. | 3.M.1 Evaluate how effective management skills may assist with employee retention. | 3.D.1 Develop a plan to promote employee motivation for given posts in the land-based business identified in AC 3.1. |
| 4. Understand performance management and the contribution of employees to achieving key business performance indicators. | 4.1. Explain how to promote employee co-operation in a land-based business.<br>4.2. Explain the importance of employee performance management.<br>4.3. Explain at least two methods for measuring and managing employee performance of an employee using the appraisal process. | 4.M.1 Explain how employees contributions may impact on key business performance indicators. | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

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|---|---|
| Title | Safe Handling and Application of Pesticides using Vehicle Mounted Sprayers |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF377 |
| Unit Reference No | M/618/6955 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the safe handling and use of pesticides and the safe and competent operation of vehicle mounted sprayers.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand safe handling, storage and legislative requirements for use of pesticides. | 1.1. Summarise the legislative requirements and codes of practice relating to the use of pesticides.<br>1.2. Summarise how to minimise the risk of human contamination.<br>1.3. Explain how to store and transport pesticides safely.<br>1.4. Explain how to manage and dispose of surplus pesticide and waste materials safely.<br>1.5. Explain the record keeping requirements for the storage and use of pesticides. | 1.M.1 Evaluate the suitability of a given store for different pesticides. | |
| 2. Understand pesticide product labelling, associated environmental factors and risks to be considered. | 2.1. Interpret a given pesticide product information leaflet.<br>2.2. Explain how to minimise the risk of environmental contamination for a given pesticide.<br>2.3. Explain the emergency procedures to be implemented in the event of contamination from a given pesticide.<br>2.4. Explain the environmental factors to be considered in the safe mixing and application of a given pesticide. | 2.M.1 Evaluate the environmental impact of not following the recommendations in relation to pesticide spray rate and spraying conditions. | 2.D.1 Develop and justify a pesticide control plan for a given crop to minimise environmental impact. |
| 3. Understand the importance of using | 3.1. Explain the reasons for applying the | 3.M.1 Evaluate how settings for a sprayer can be | |

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| the correct amount of product and how to correctly prepare and use a tractor mounted sprayer for spraying. | correct amount of pesticide to a crop.<br>3.2. Perform pre-use checks to the prime mover and pesticide sprayer and identify applicator components and controls.<br>3.3. Calibrate the pesticide sprayer and record appropriate data.<br>3.4. Measure and calculate the area, quantities of pesticide and water required for a certain area to be sprayed and prepare sprayer for use. | adjusted to optimise application rate and efficiency of operation. | |
| 4. Understand how to correctly apply pesticides and the need for safe disposal of waste product. | 4.1. Explain the importance of correct application of pesticide.<br>4.2. Perform pesticide application procedures safely and accurately.<br>4.3. Complete a treatment record for a treated crop.<br>4.4. Explain how to manage surplus pesticide safely.<br>4.5. Explain how to dispose of residual pesticide in the sprayer tank safely.<br>4.6. Explain how to clean and decontaminate sprayers and prime movers.<br>4.7. Explain the storage requirements for the sprayer. | 4.M.1 Evaluate the potential risks to the operator of incorrect application and disposal of pesticide. | 4.D.1 Develop a Standard Operating Procedure for the application of a given pesticide to include:<br>a) the operator<br>b) machinery and equipment |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

| | |
|---|---|
| Title | Safe Handling and Application of Pesticides Using Knapsack Sprayers |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF378 |
| Unit Reference No | A/618/6957 |

*Unit purpose and aim(s):* This unit will enable the learner to understand the safe handling and use of pesticides and the safe and competent operation of knapsack sprayers.

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand safe handling, storage and legislative requirements for use of pesticides. | 1.1. Summarise the legislative requirements and codes of practice relating to the use of pesticides.<br>1.2. Summarise how to minimise the risk of human contamination.<br>1.3. Explain how to store and transport pesticides safely.<br>1.4. Explain how to manage and dispose of surplus pesticide and waste materials safely.<br>1.5. Explain the record keeping requirements for the storage and use of pesticides. | 1.M.1 Evaluate the suitability of a given store for different pesticides. | |
| 2. Understand pesticide product labelling, associated environmental factors and risks to be considered. | 2.1. Interpret a given pesticide product information leaflet.<br>2.2. Explain how to minimise the risk of environmental contamination for a given pesticide.<br>2.3. Explain the emergency procedures to be implemented in the event of contamination from a given pesticide.<br>2.4. Explain the environmental factors to be considered in the safe mixing and application of a given pesticide. | 2.M.1 Evaluate the environmental impact of not following the recommendations in relation to pesticide spray rate and spraying conditions. | 2.D.1 Develop and justify a pesticide control plan for a given crop to minimise environmental impact. |

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| 3. Understand how to correctly prepare and use a knapsack sprayer. | 3.1. Explain the reasons for applying the correct amount of pesticide to the crop.<br>3.2. Perform pre-use checks on knapsack sprayer and identify applicator components and controls.<br>3.3. Measure and calculate the area, quantities of pesticide and water required for a certain area to be sprayed and prepare sprayer for use. | 3.M.1 Evaluate how settings for a sprayer can be adjusted to optimise application rate and efficiency of operation. | |
| 4. Understand how to correctly apply pesticide and the need for safe disposal of waste product. | 4.1. Explain the importance of correct application of pesticide.<br>4.2. Perform pesticide application procedures safely and accurately.<br>4.3. Complete a treatment record for a treated crop.<br>4.4. Explain how to manage surplus pesticide safely.<br>4.5. Explain how to dispose of residual pesticide in the sprayer tank safely.<br>4.6. Explain how to clean and decontaminate knapsack sprayers.<br>4.7. Explain the storage requirements for knapsack sprayers. | 4.M.1 Evaluate the potential risks to the operator of incorrect application and disposal of pesticide. | 4.D.1 Develop a Standard Operating Procedure for the application of a given pesticide to include<br>a) the operator<br>b) machinery and equipment |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |

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| | OR<br>A collection of documents containing work that shows the learner's progression through the course | |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

| | |
|---|---|
| Title | All-Terrain Vehicles and Rough Terrain Telescopic Forklift Operations |
| Level | Three |
| Credit Value | 10 |
| Guided Learning Hours (GLH) | 60 |
| OCN NI Unit Code | CBF379 |
| Unit Reference No | F/618/6958 |

*Unit purpose and aim(s):* This unit will enable the learner to develop the skills and knowledge to safely operate All-Terrain Vehicles (ATVs) and Rough Terrain Telescopic Forklifts (RTFLs).

| Learning Outcomes | Assessment Criteria = Pass | Assessment Criteria = Merit | Assessment Criteria = Distinction |
|---|---|---|---|
| 1. Understand the functions of key components of ATVs and (RTFLs and undertake adjustments. | 1.1. Explain five key components of both ATVs and RTFLs.<br>1.2. Perform operator adjustments and inputs on five components used in:<br>a) ATVs<br>b) RTFLs | 1.M.1 Evaluate how settings for the following can be adjusted to optimise efficiency for a given:<br>a) ATV<br>b) RTFL | |
| 2. Understand the operating principles, transmission systems and lines of drive of ATVs and RTFLs. | 2.1. Explain the operating principles and features of ATV's and RTFLs.<br>2.2. Explain the operating principles and features of transmission systems in ATVs and RTFLs.<br>2.3. Explain factors that may affect the lines of drive for ATVs RTFLs. | 2.M.1 Evaluate the benefits of different types of transmissions in ATVs and RTFLs including:<br>a) power consumption<br>b) fuel efficiency<br>c) safety<br>d) machine wear | 2.D.1 Assess and justify for a given land-based business RTFL requirements making recommendations on the specifications. |
| 3. Be able to prepare and operate ATVs and RTFLs. | 3.1. Prepare for use and operate both an ATV and a RFTL for a given task. | 3.M.1 Critically compare the benefits of using ATV's and RTFL's in a land-based business c to other conventional machinery. | 3.D.1 Develop Standard Operating Procedures for the safe use of an ATV and RTFL in land-based businesses for a given situation. |
| 4. Be able to maintain ATVs and RTFLs and the importance of servicing for both. | 4.1. Explain the importance of the maintenance and service of ATVs and RTFLs.<br>4.2. Perform routine maintenance on ATVs and RTFLs including:<br>a) checking oil levels and topping up as required | | |

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| | b) checking filters and replacing as required<br>c) checking tyre pressure and condition and adjusting as required<br>d) checking all lights are operating correctly<br>e) cleaning | | |

**Assessment Guidance**

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

| Assessment Method | Definition | Possible Content |
|---|---|---|
| Portfolio of evidence | A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes<br>OR<br>A collection of documents containing work that shows the learner's progression through the course | Learner notes/written work<br>Learner log/diary<br>Peer notes<br>Record of observation<br>Record of discussion |
| Practical demonstration/assignment | A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge | Record of observation<br>Learner notes/written work<br>Learner log |
| Coursework | Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course | Record of observation<br>Learner notes/written work<br>Tutor notes/record<br>Learner log/diary |
| E-assessment | The use of information technology to assess learners' work | Electronic portfolio<br>E-tests |

# 11. Quality Assurance of Centre Performance

## 11.1 Internal Quality Assurance

When delivering and assessing this qualification, centres must align with stakeholders' expectations and address learners' needs by implementing a practical and applied programme. Centres have the flexibility to customise programmes to meet local requirements and establish connections with local employers and the broader vocational sector.

The Assessor should work with the Internal Quality Assurer to ensure that the assessment is planned in line with OCN NI requirements. Assessment Plans must be developed and approved by the Internal Quality Assurer prior to the delivery of the qualification.

All units within this qualification must undergo internal assessment. Learners must provide evidence that they have appropriately met all assessment criteria required for that grade.

The assessment format for all units involves a task conducted after the delivery of the unit's content, or part of it, if multiple tasks are used. Tasks may exhibit in various forms, encompassing practical and written types. Please refer to 'OCN NI's Assessment Definitions Guide' for additional details.

A task constitutes a distinct activity completed independently by learners, separated from teaching, practice, exploration, and other activities guided by tutors. Tasks are assigned to learners with a specified start date, completion date, and explicit requirements for the evidence to be produced. Some tasks may include observed practical components and require diverse forms of evidence.

A valid assignment will enable a clear and formal assessment outcome which meets the requirements of the assessment criteria. Assessment decisions are based on the specific assessment criteria given in each unit and set at each grade level. The way in which individual units are written provides a balance of assessment of understanding, practical skills and vocational attributes appropriate to the purpose of qualification.

It is the Assessor's role to ensure that learners are appropriately prepared for assessment, this begins from induction onwards. Assessors should ensure that learners understand how assessment tasks are used to determine the award of credit, the importance of meeting assessment timelines, and that all learners work must be independently created, where source documents are used this should be appropriately referenced, learners should be aware of what would constitute plagiarism and the possible consequences.

When conducting the assessment, Assessors must ensure they do not provide direct input, instructions or specific feedback which may compromise the authenticity of the work submitted.

Once the Assessor has authenticated the learners work, they must transparently demonstrate the rationale behind their assessment decisions. Once a learner completes all assigned tasks for a unit, the Assessor will allocate a grade for the unit. Refer to the 'Unit Grading Matrix' for additional information on the grading process.

Once the Assessor has completed the assessment process for the task, the assessment decision is recorded formally, and feedback is provided to the learner. The feedback should show the learner the outcome of the assessment decision, how it was determined or where the criteria has been met, it may indicate to the learner why achievement of the assessment criteria has not been met. It must be clear to the learner that this Assessment outcome is subject to verification.

For further information on assessment practice, please see the 'OCN NI Centre Handbook'. Assessment Training is also available and can be booked through the OCN NI Website.

## 11.2 Internal Quality Assurance

The role of the Internal Quality Assurer is to ensure appropriate internal quality assurance processes are carried out. The Internal Quality Assurer must oversee that assessments are conducted in accordance with relevant OCN NI policies, regulations, and this specification.

The Internal Quality Assurer must ensure assessments are fair, reliable, and uniform, thereby providing a consistent standard for all learners.

Internal Quality Assurers are required to provide constructive feedback to Assessors, identifying areas of strength and those that may require improvement. This feedback contributes to the ongoing professional development of Assessors.

Contributing to the standardisation of assessment practices within the centre is an important function of this role. This entails aligning assessment methods, grading criteria, and decision-making processes to maintain fairness and equity.

Internal Quality Assurers will actively engage in the sampling and monitoring of assessments to ensure the consistency and accuracy of assessment decisions. This process helps identify trends, areas for improvement, and ensures the robustness of the overall assessment system.

For further information on Internal Quality Assurance practice, please see the 'OCN NI Centre Handbook'. Internal Quality Assurance Training is also available and can be booked through the OCN NI Website.

## 11.3 Documentation

For internal quality assurance processes to be effective, the internal assessment and Internal Quality Assurance team needs to keep effective records.

- The programme must have an assessment and Internal Quality Assurance plan. When producing a plan, they should consider:
    - the time required for training and standardisation activities
    - the time available to undertake teaching and carry out assessment,
    - consider when learners may complete assessments and when quality assurance will take place
    - the completion dates for different assessment tasks
    - the date by which the assignment needs to be internally verified
    - sampling strategies
    - how to manage the assessment and verification of learners' work so that they can be given formal decisions promptly
    - how resubmission opportunities can be scheduled.

The following documents are available from OCN NI and document templates can be found in the Centre Login section of the OCN NI website www.ocnni.org.uk:

- A1 – Learner Assessment Record per Learner
- Learner Authentication Declarations
- Records of any reasonable adjustments applied for and the outcome – please see 'OCN NI's Reasonable Adjustments and Special Consideration Policy' for further information
- M1 Internal Quality Assurance Sample Record
- M2 Feedback to Assessor
- Records of any complaints or appeals

## 11.4 External Quality Assurance

All OCN NI recognised centres are subject to External Quality Assurance. External quality assurance activities will be conducted to confirm continued compliance with the CCEA Regulation General Conditions of Recognition, OCN NI terms and conditions and the requirements outlined within this qualification specification.

The External Quality Assurer is assigned by OCN NI. The External Quality Assurer will review the delivery and assessment of this qualification. This will include, but is not limited to, the review of a sample of assessment evidence and evidence of the internal quality assurance of assessment and assessment decisions. This will form the basis of the External Quality Assurance report and will help OCN NI determine the centre's risk.

The role of the External Quality Assurer serves as an external overseer of assessment quality, working to uphold consistency, compliance, and continuous improvement within the assessment process. Their role is crucial in ensuring that assessments are valid, reliable, fair, and aligned with the required standards and regulations.

For further information on OCN NI Centre Assessments Standards Scrutiny (CASS) Strategy, please see the OCN NI Centre Handbook.

## 11.5 Standardisation

As a process, standardisation is designed to ensure consistency and promote good practice in understanding and the application of standards. Standardisation events:

- make qualified statements about the level of consistency in assessment across centres delivering a qualification
- make statements on the standard of evidence that is required to meet the assessment criteria for units in a qualification
- make recommendations on assessment practice
- produce advice and guidance for the assessment of units
- identify good practice in assessment and Internal Quality Assurance

Centres offering this qualification must carry out internal standardisation activities prior to the claim for certification.

Centres offering units of an OCN NI qualification must attend and contribute assessment materials and learner evidence for standardisation events if requested.

OCN NI will notify centres of the nature of sample evidence required for standardisation events (this will include assessment materials, learner evidence and relevant Assessor and Internal Quality Assurer documentation). OCN NI will make standardisation summary reports available and correspond directly with centres regarding event outcomes.

# 12. Administration

## 12.1 Registration

A centre must register learners for this qualification within 20 days of commencement of the delivery of the programme.

For further information on learner registration please see the OCN NI Centre Handbook and the QuartzWeb Manual, available through the Centre Login section of the OCN NI website. Administration training is also available and can be booked through www.ocnni.org.uk.

## 12.2 Certification

Once all internal quality assurance activities have been successfully completed, the centre can claim certification for the learner(s).

Certificates will be issued to centres within 20 working days from completion of a satisfactory external quality assurance activity, if appropriate, alternatively from the submission of an accurate and complete marksheet.

It is the responsibility of the centre to ensure that certificates received from OCN NI are held securely and distributed to learners promptly and securely.

For further information on the uploading of results please see the QuartzWeb Manual for guidance, administration training is also available and can be booked through OCN NI

## 12.3 Charges

OCN NI publishes all up-to-date qualification fees in its Fees and Invoicing Policy document. Further information can be found on the centre login area of the OCN NI website.

## 12.4 Equality, Fairness and Inclusion

OCN NI's are committed to ensuring all learners have an equal opportunity to access our qualifications and assessment, and that our qualifications are awarded in a way that is fair to every learner.

OCN NI is committed to making sure that:

- learners with a protected characteristic are not, when they are undertaking one of our qualifications, disadvantaged in comparison to learners who do not share that characteristic
- all learners achieve the recognition they deserve for undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers

For information on reasonable adjustments and special considerations please see the OCN NI Centre Handbook and Reasonable Adjustments and Special Considerations Policy held in the back office of the OCN NI website.

## 12.5 Retention of Evidence

OCN NI has published guidance for centres on the retention of evidence. Details are provided in the OCN NI Centre Handbook and can be accessed via the OCN NI website.

## OCN NI Level 3 Extended Diploma in Agricultural Business
## Qualification Number: 603/7399/4

Operational start date: 15 April 2021
Review date: 31 March 2031

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