

NextGen: HN unit specification

Principles of Livestock Production (SCQF level 7)

Unit code: JOVV 47

SCQF level: 7 (32 SCQF credit points)

Valid from: August 2026

This unit specification provides detailed information about the unit to ensure consistent and transparent assessment year on year. It is for lecturers and assessors, and contains all the mandatory information you need to deliver and assess the unit.

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Unit purpose

This unit gives you an overview of livestock production in the UK. It covers the science, husbandry and technology involved, along with the environmental considerations.

Entry requirements

Entry to this qualification is at your centre's discretion. Before they start the unit, learners would benefit from having completed Mathematics and English at National 5, or equivalent. We recommend that learners have also completed one or more of the following:

- two Highers, preferably including a science
- an NC or SVQ Agriculture at SCQF level 6, or a relevant, alternative subject
- relevant work experience

Unit outcomes

Learners who complete this unit can:

1. explain the principles of livestock science
2. describe and analyse the application of the principles of livestock science in a range of livestock production systems
3. describe the relationship between livestock production and the environment, and develop strategies to enhance the relationship — making reference to sustainability principles (social, economic, environmental) and the United Nations (UN) Sustainable Development Goals (SDGs)
4. describe the application of precision livestock technology in a livestock production system

Evidence requirements

The unit is designed to be assessed through a portfolio of evidence generated across all learning outcomes. To successfully achieve these outcomes, learners must provide the following evidence:

Outcome 1

Learners must:

- identify the structure and functions of reproductive and digestive anatomy
- explain how the endocrine system functions
- explain how the immune system functions
- explain the physiology of growth and reproduction
- identify appropriate animal feeds and their uses

Outcomes 2 and 3

You can assess these outcomes together by asking learners to produce a portfolio in which they describing two livestock production systems. Their information must include the following evidence for each system:

- a description of the farm
- a description of the livestock production systems
- a description of the buildings and machinery used on farm
- relevant health plans
- feeding plans for two groups of livestock
- an analysis of the application of principles of livestock science on farm
- a description of the relationship between the livestock production systems and the environment
- an explanation of how the livestock production systems meet sustainability principles and the aims of at least two of the UN SDGs
- strategies that could be used to enhance the relationship between livestock production and the environment

Outcome 4

You can assess this outcome by asking learners to complete a short project, that must include the following evidence:

- selection of on-farm data using a precision livestock technology
- interpretation of data
- a description of how this data could be utilised

Knowledge and skills

Knowledge	Skills
Outcome 1 Learners should understand: the principles of livestock science	Outcome 1 Learners can: describe and explain the principles of livestock science
Outcome 2 Learners should understand: how the principles of livestock science affect livestock in production systems	Outcome 2 Learners can: apply the principles of livestock science in production systems
Outcome 3 Learners should understand: the relationship between livestock production and the environment	Outcome 3 Learners can: describe the relationship between livestock production and the environment
Outcome 4 Learners should understand: how to apply precision livestock technology in a livestock production system	Outcome 4 Learners can: describe how to apply precision livestock technology in a livestock production system

Meta-skills

You must give learners opportunities to develop their meta-skills throughout this unit. We have suggested how to incorporate the most relevant ones into the unit content, but you may find other opportunities.

Throughout the unit, learners develop meta-skills to enhance their employability in the agriculture sector. Where possible you should deliver and assess the unit holistically, in accordance with the integrated nature of agriculture, so that learners gain and develop meta-skills throughout the unit.

Self-management

This includes focusing, integrity, adapting and initiative. The most relevant are:

- focusing:
 - collecting the correct information for the portfolio by filtering out non-essential material
- integrity:
 - reflecting on the ethics of farming livestock, considering their welfare and learners' personal views
- adapting:
 - developing openness and adaptability by considering the environmental impacts of livestock production systems, and the impact the environment and climate change has on livestock production systems

Social intelligence

This includes communicating, feeling, collaborating and leading. The most relevant are:

- communicating:
 - building communication skills — particularly an ability to listen, receive information and give information to obtain accurate data for the portfolio
- feeling:
 - developing empathy when considering animal welfare, and nurturing a social conscience about livestock farming and the environment

Innovation

This includes curiosity, creativity, sense-making and critical thinking. The most relevant are:

- curiosity:
 - improving information sourcing and questioning to enhance understanding
- sense-making:
 - demonstrating and developing synthesising, and logical and computational thinking skills when analysing data

Literacies

This unit provides opportunities to develop the following literacies.

Numeracy

Learners develop their numeracy skills by

- collecting and interpreting real farm data for outcome 4
- using figures inherent in livestock production

Communication

Learners enhance their communication skills by:

- gathering information for all learning outcomes
- communicating findings through assessments

Digital

Learners improve their digital skills and computer literacy by:

- collecting and analysing data for outcome 4, ideally utilising digital technologies
- producing assessment evidence, as well as engaging with learning materials and course content

Learning for Sustainability

Throughout this unit, you should encourage learners to develop their skills, knowledge and understanding of sustainability.

This includes:

- a general understanding of social, economic and environmental sustainability
- a general understanding of the United Nations Sustainable Development Goals (SDGs)
- a deeper understanding of subject-specific sustainability
- the confidence to apply the skills, knowledge, understanding and values they develop in the next stage of their life

Delivery of unit

You should arrange visits to a range of livestock farms so that learners can experience the practical application of the theory you are teaching them. You should link into the Professional Practice and Skills in Agriculture unit by making reference to practical livestock skills.

The amount of time you allocate to this unit is at your discretion. The notional delivery time is 160 hours.

Additional guidance

The guidance in this section is not mandatory.

Approaches to delivery

Explain the principles of livestock science (outcome 1)

Suggested content

You should cover the following content so that learners can describe and explain the principles of livestock science, including:

- anatomy:
 - the structure and functions of the male and female reproductive tracts, including mammalian and avian examples
 - the digestive anatomy of the monogastric and ruminant animal
 - the udder
- endocrine system:
 - the role and function of the endocrine system for reproduction, growth, and digestion
- immune system:
 - the main pathogens, along with common disease examples
 - their transmission routes
 - appropriate prevention and treatment strategies
- growth and reproduction:
 - the properties of muscle, adipose and skeletal tissue, and identification of the cells involved in their construction

- gamete development, oestrus, ovulation, mating, fertilisation, implantation, placentation, foetal growth, gestation, parturition, care of the neonate and lactation
- feed and nutrition
 - identification of feeds
 - properties
 - appropriate uses

Suggested evidence

You can assess this outcome using short, in-class, closed-book tests, or short, open-book tests, which can include multiple-choice and short-answer questions.

Describe and analyse the application of the principles of livestock science in a range of livestock production systems (outcome 2)

Suggested content

- Describe various production systems, including:
 - beef
 - lamb
 - dairy
 - pigs
 - broilers and layers
- Explain the variety in systems:
 - intensive
 - extensive
 - regenerative and organic systems
 - geographies

- Describe the husbandry in each system, including:
 - breeding: pre-mating checks, mating and artificial intelligence (AI), pregnancy, parturition and care of the neonate
 - health: signs of ill-health; diseases (including symptoms, prevention and treatment); health plans
 - nutrition: feed identification (not rationing), following a ration to make the diet, body condition scoring (BCS), basic requirements
 - welfare and behaviour: positive animal welfare, signs of suffering, the five freedoms
 - housing: basic housing principles
 - grass and fodder management: utilisation (not production)
- Explain products and outputs including:
 - products from different systems: meat, wool, eggs and milk
 - the importance of sending clean stock to slaughter, preparing stock for slaughter, preparing stock for sale, injection sites and bruising (not carcass grading)

Describe the relationship between livestock production and the environment, and develop strategies to enhance the relationship (outcome 3)

Suggested content

- soil: erosion, sedimentation, compaction, organic matter, role as a fertiliser, rotation
- water courses: nitrogen, eutrophication, flooding
- biodiversity
- awareness of impacts of livestock on climate change: methane and efficiency
- awareness of impacts of climate change on livestock: fluke, heat stress

- potential strategies to enhance the relationship between livestock production and the environment: late cutting of grass, use of water margins, conservation grazing systems, improved efficiencies, reduced use of plastics

Outcomes 2 and 3

Suggested evidence

You can assess these outcomes together by means of a portfolio in which learners describe two livestock production systems, including:

- a description of the farm(s)
- a description of two different livestock production systems
- a description of the buildings and machinery used on farm for each livestock production system
- relevant health plans
- feeding plans for two groups of stock in each production system
- an analysis of the application of the principles of livestock science on farm, including feeding, health and breeding
- an analysis of the relationship between the livestock production systems and the environment
- potential strategies to enhance the relationship between livestock production and the environment

The portfolio should be 3,000 words in total.

Describe the application of precision livestock technology in a livestock production system (outcome 4)

Suggested content

- the importance of data for livestock production
- data-collection methods using precision livestock technologies
- the application of data on farm

Suggested evidence

You can assess outcome 4 through a short project where learners collect farm data, input the data into a spreadsheet, and then interpret it and make suggestions. They can present this as a poster, oral presentation, video, podcast, report or suitable equivalent.

An example project would be to ask learners to collect lamb weights using electronic identification (EID), analyse weights by looking at the daily live weight gain (DLWG), then suggest a worming strategy.

You can assess this outcome alongside outcome 4 in the Principles of Crop Production unit.

Resources

Centres delivering this qualification must have suitably qualified staff for each of the subject components. Your centre should already have established processes to ensure staff are appropriately qualified to deliver in this subject area.

Assessors and internal verifiers must hold an industry and/or subject-specific qualification equivalent to the qualification. Centre staff should have relevant industry experience and be able to demonstrate industry-relevant CPD to maintain their subject-specific knowledge and skills.

Equality and inclusion

This unit is designed to be as fair and as accessible as possible with no unnecessary barriers to learning or assessment.

You must consider the needs of individual learners when planning learning experiences, selecting assessment methods or considering alternative evidence.

Guidance on assessment arrangements for disabled learners and those with additional support needs is available on the [assessment arrangements web page](#).

Information for learners

Principles of Livestock Production (SCQF level 7)

This information explains:

- what the unit is about
- what you should know or be able to do before you start
- what you need to do during the unit
- opportunities for further learning and employment

Unit information

This unit gives you the knowledge and skills you need to:

- explain the principles of livestock science
- describe and analyse the principles of livestock science in production systems
- describe the relationship between livestock production and the environment, and develop strategies to enhance the relationship — making reference to sustainability principles (social, economic, environmental) and the United Nations (UN) Sustainable Development Goals (SDGs)
- describe the application of precision livestock technology in a livestock production system

When you study the unit, you learn the theoretical knowledge of the scientific principles that underpin livestock production, including animal health, breeding and nutrition. You look at the effect livestock production systems have on the environment and what farmers can do to reduce any negative impacts. The unit shows you how precision technology can be used to assist livestock farmers.

Prior knowledge and skills

Before you start the unit, you would find it helpful to have completed Mathematics and English at National 5, or equivalent. We also recommend that you have completed one or more of the following:

- two Highers, preferably including a science
- an NC or SVQ Agriculture at SCQF Level 6, or a relevant, alternative subject
- relevant work experience

You do not need any prior experience or understanding of livestock production systems to study the unit. The Professional Practice and Skills in Agriculture unit allows you to put much of this theory into practice if you complete it at the same time.

Assessment

You can be assessed in a variety of ways:

- Outcome 1: you can be assessed using short tests that include short-answer or multiple-choice questions.
- Outcomes 2 and 3: you create a portfolio of your investigations into a livestock production system on farm.
- Outcome 4: you carry out a short project in which you select and analyse real farm data, and make suggestions on your findings.

Future progression and employment

If you study this unit as part of HNC Agriculture, you may have the opportunity to progress to a HND or degree-level course in agriculture or a related subject. Alternatively, your skills and knowledge could lead to employment at an operational level on a farm as, for example, a stockperson, general farm worker or tractor operations worker.

Meta-skills

Throughout this unit, you develop meta-skills that are useful for the agriculture sector.

Meta-skills are transferable behaviours and abilities that help you adapt and succeed in life, study and work. There are three categories of meta-skills: self-management, social intelligence and innovation.

Self-management

You develop your self-management skills as you collect relevant information for your portfolio; reflect on the ethics of farming livestock, considering their welfare and the learners' personal views; and adapt your practice given environmental impacts.

Social intelligence

You develop your social intelligence skills as you build your listening skills and ability to relay accurate information, and nurture a social conscience about livestock farming and the environment.

Innovation

You develop your innovation skills as you seek out information and question your sources; approach the farming system in all its complexity, considering the environment and livestock; and demonstrate logical thinking skills when analysing data.

Learning for Sustainability

Throughout this unit, you develop skills, knowledge and understanding of sustainability.

You learn about social, economic and environmental sustainability principles and how they relate to the agriculture sector. You also develop an understanding of the [United Nations Sustainable Development Goals](#).

Administrative information

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Superclass: SH

History of changes

Version	Description of change	Date

Please check [our website](#) to ensure you are using the most up-to-date version of this unit.

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