



MCAST

Malta College of Arts, Science & Technology

MQF Level 6

AG6-01-19

**MCAST Bachelor of Science (Honours) in Animal
Management and Veterinary Nursing**

Course Specification

Course Description

This bachelor's degree aims of providing students with the opportunity to specialise in a main area of study with the aim of seeking employment at management level or similar. This may relate to animal welfare, production, education, veterinary services, research and development, and regulatory services both locally and internationally.

The programme offers the required knowledge skills and competences related to animal health and nutrition, welfare, ecology, philosophy, ethics and law. Students shall also undertake a research project whereby they will be expected to select a topic for investigation following an established methodology.

Programme Learning Outcomes

At the end of the programme the learner will be able to:

1. Understand and apply research methods to carry out an advanced project study based on scientific research related to specific units within the course's area of study
2. Understand and research different entrepreneurial skills required at management level and to plan for a successful business
3. Undertake practical tasks related to veterinary services including animal welfare and health and veterinary regulatory affairs
4. Study and apply principles of sustainability, animal philosophy and ethics within the animal management sector.

Entry Requirements

MCAST Advanced Diploma in Animal Management and Veterinary Nursing

or

MCAST Advanced Diploma in Fish Management

or

2 A-Level passes and 2 I-Level passes

Preferred I-Level: Biology or Chemistry

Current Approved Programme Structure

| Unit Title | ECVET/ECTS |
|---|-------------------|
| Agriculture and the Environment | 3 |
| Apiculture | 6 |
| Agricultural Marketing and Agri-Tourism | 6 |
| Research Methodologies | 6 |
| Implementation of SOPs and Principles of HACCP | 6 |
| Veterinary Pharmacology | 6 |
| Horse Husbandry | 6 |
| Veterinary Nursing II | 6 |
| Animal Biology and Physiology | 6 |
| Agriculture Policy | 3 |
| Food Flavour and Tasting | 6 |
| Animal Behaviour | 6 |
| Genetics and Animal Breeding | 6 |
| Emergency Nursing and Anaesthesia | 6 |
| Exotic Animals | 6 |
| Practical Nutrition and Feed Formulation | 6 |
| Processing of Animal Products | 6 |
| Veterinary Surgical Nursing | 6 |
| Business Management & Work Experience | 6 |
| Wildlife Science and Conservation | 6 |
| Business Planning | 6 |
| Rural Development | 6 |
| Development of Land Based Activities | 6 |
| Animal Welfare-Ethics and Legislation | 6 |
| Production animal livestock management | 6 |
| Animal Health – Diseases, Epidemiology & Management | 6 |
| Dissertation | 12 |
| English | 6 |
| Critical Thinking | 6 |
| Entrepreneurship | 6 |
| Total ECVET/ECTS | 180 |

ECVET are used for programmes at MQF Level 1-4 whilst ECTS is used for programmes at MQF Level 5-6

Agriculture and the Environment

Unit level (MQF): 5

Credits: 3

Unit Description

This is a knowledge based unit and will demonstrate the learner's abilities to evaluate and understand the benefits of organic principles from a variety of philosophies that can be utilised in crop production for the protection of the environment.

The learner will demonstrate an understanding of key organic concepts that can be applied to crop production and the permissible and non-permissible practices under organic certification schemes. The unit also enhances knowledge of general environmental practices, issues and problems. On completion of the unit learner's will be able to understand the need for good environmental practices as an investment for the future and the role that organic organizations may have in developing environmentally friendly management of the soil and production techniques.

Learners will gain knowledge of key organic organisations and the services they offer and be able to analyse and compare different systems and their feasibility in crop production. The learner's will also gain an understanding of certification processes and their implications on management systems.

Learners will gain underpinning knowledge of the differences between 'conventional growing systems' and organic systems and the impact they have on the environment. The learner's will also explore specific philosophies and system such as Permaculture and Biodynamic and the background to their development and what they have to offer as production systems.

Learning Outcomes

On completion of this unit the student will be able to

1. *Explain the principles of Organic Agriculture.*
2. *Evaluate organic practices and techniques.*
3. *Analyse the principles of Permaculture.*
4. *Analyse the principles of Biodynamic Agriculture.*

Apiculture

Unit level (MQF): 5

Credits: 6

Unit Description

The purpose of this Unit is to enable learners to develop skills of analytical thinking and scientific enquiry. Learners will gain an understanding of apiculture and will be able to apply these skills when considering the applications of bee keeping in our lives. The approach of this Unit is to not only provide knowledge to the student but also teach the learner problem solving and investigation skills. The Apiculture Unit covers the main areas of understanding bees, their physiology and anatomy, pest and diseases that affect bees and why bees swarm. Learners who complete this unit will be able to draw on the knowledge and understanding of the key areas of apiculture and apply the skills of scientific enquiry to practical investigation.

The Apiculture Unit is a core unit of the Diploma in Higher Diploma in Horticulture and is also available as a free-standing Unit. The unit is relevant to learners aspiring to further advance their knowledge of bees and bee keeping. Learners are encouraged to research current apiculture issues and thus develop their scientific literacy. On completion of the Unit, learners will appreciate how the bee colony functions, the threats to their survival, swarming triggers and swarming prevention, the types of bee products and the functional anatomy of these insects.

Learning Outcomes

On completion of this unit the student will be able to

1. *Explain bee basics to show how bees work.*
2. *Describe bee anatomy and physiology for understanding how bees function.*
3. *Discuss bee pests and diseases in order to protect bee colonies.*
4. *Analyse bee swarming and prevention for managing bee colonies.*

Agricultural Marketing & Agri-tourism

Unit level (MQF): 5

Credits: 6

Unit Description

This unit introduces learners to key concepts and functions of 'Marketing' as they apply to the tourism sector and in specific Agri-tourism. This unit is divided into two key areas - Agricultural Marketing and Agri-tourism: The first focuses on the concept of Marketing and elements of the Marketing (principals) and provides the learner with a knowledge base in relation to marketing and its application to business and agri-business. The second key area focuses on Agri-tourism and provides the learner with an understanding of tourism concepts, Agr-tourism with specific focus on Malta.

The unit is made up two key areas:

1) Agricultural Marketing:

- Concepts of Marketing (definition, theories and customer aspect).
- Marketing principles (Elements of marketing principles, agricultural marketing principles Ps, Macro and Micro environments)
- Agricultural Marketing relating to food and niche products

2) Agri-tourism:

- Identify and explore Agricultural tourism (what is agri-tourism, various types of agri-tourism businesses, why is agri-tourism becoming important and popular, sustainability concepts linked to agri-tourism).
- Explore Agricultural-tourism in Malta (agricultural tourism businesses in Malta; the Maltase tourist plan (agri-tourism); why is agri-tourism important to the Maltase economy (including how agri-tourism can be integrated with Malta's historical and cultural aspects) ; explore types of agri-tourism businesses in Malta.

This unit will provide learners with knowledge and understanding of key factors affecting marketing environments and investigate the role of marketing in relation to agri-tourism.

Learning Outcomes

On completion of this unit the student will be able to

1. *Describe the key elements of marketing.*
2. *Investigate marketing principles in relation to Agri-business marketing.*
3. *Assess the significance of agri-tourism to the different stakeholders.*
4. *Evaluate the potential of organizing agri-tourism activities on the farm.*

Research Methodologies

Unit level (MQF): 5

Credits: 6

Unit Description

This unit prepares students for their independent research project linked to Fisheries or Aquaculture. In both cases, students are guided in the process of carrying out a research enquiry from initial concept to final report. The unit will demonstrate methodological approaches to collecting and analysing data and will address ethics in research.

Another key aspect of this unit is the development of a working relationship between the student and their supervisor(s) and this will be addressed through the recommended timeline and activities.

Finally the unit will guide students in how to write critically and objectively in producing their final project and how to correctly cite and reference the work of others in their own original work.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Develop a research enquiry from initial objectives and a review of others work, through the proposed research.*
2. *Complete the research through to the final report.*
3. *Evaluate findings and results of research project.*
4. *Present the proposal and findings of the project.*

Implementation of SOPs and Principles of HACCP

Unit level (MQF): 5

Credits: 6

Unit Description

The unit will set the context for understanding of the role of standard operating procedures (SOPs), and hazard analysis critical control point (HACCP) plans within a food safety and quality management system. HACCP is the management tool that ensures that the documented management system focuses on product safety as well as quality issues. A food safety and quality management system in the agricultural supply chain will contain a range of pre-requisite programmes (PRPs) of which SOPs form one element. The PRPs can include personal and premises hygiene programmes and waste control procedures; equipment control and site maintenance procedures; supplier approval and incoming material inspection procedures; traceability procedures, calibration programmes, pest control programmes and training programmes. The importance of record keeping will also be emphasised.

The unit will cover the purpose, development, implementation and verification of SOPs in a food supply chain environment and also how food safety plans are developed, documented, validated, implemented and verified in the agricultural supply chain. The course will focus on the Codex Alimentarius method of developing HACCP Plans and includes the methodology of food safety risk assessment. Emphasis is placed on quality assurance and the role of quality control throughout the agricultural supply chain, including both product and process controls.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Demonstrate the principles of HACCP and how to develop, implement and monitor a simple food safety plan;*
2. *Develop standard operating procedures in the agricultural setting and produce relevant procedures that support the effective operation of the business.*
3. *Define how agricultural businesses, through the adoption of appropriate management systems, can effectively address food quality and mitigate food safety risk.*

Veterinary Pharmacology

Unit level (MQF): 5

Credits: 6

Unit Description

This unit introduces the Learner to the field of veterinary pharmacology. The fundamental principles of pharmacodynamics and pharmacokinetics will be explored to develop a basic understanding of how drugs work. Learners will review the key categories of medication used in veterinary practice and will explore their clinical role and contraindications. Learners will develop an understanding of the different forms of vaccines available, vaccination protocols and how to safely store vaccines. For the different categories of veterinary medication defined, examples will be provided to illustrate their common applications across a range of domestic and livestock species. A range of administration methods will be introduced to enable learners to be able to describe the correct procedure for administering oral, topical and parenteral drugs. Knowledge of how to store medication appropriately and undertake basic stock control will be discussed.

By the end of the unit, learners will be able to calculate drug dose rates for different animals and describe correct labelling and dispensing procedures for tablet and liquid medications. They will be able to explain how to correctly dispense drugs. Learners will also demonstrate knowledge of how to give tablets, apply creams and perform subcutaneous and intramuscular injections including describing suitable handling and restraint methods.

Learning Outcomes

On completion of this unit the student will be able to

1. *Identify common categories of veterinary medication.*
2. *Explain the selection, administration and storage of veterinary medication.*
3. *Discuss the basic pharmacology of veterinary medication.*
4. *Calculate drug dose rates for different animals.*

Horse Husbandry

Unit level (MQF): 5

Credits: 6

Unit Description

This unit provides the Learner with the fundamental knowledge and skills to be able to maintain health and welfare in the stabled and free-ranging equine. Throughout the unit the emphasis will be on how to work with horses and in an equestrian yard environment in a professional manner, keeping the health and safety of horses and humans as a priority. Supervised practical opportunities will be provided to enable the Learner to develop competency in a range of stable management tasks.

The essential skills to be able to assess the suitability of a variety of equine accommodation types and to manage pasture effectively will be evaluated. Learners will be able to conduct risk assessments and propose solutions to accommodation problems. The importance of establishing standard operating protocols within equestrian environments to promote health and prevent the spread of infection between horses will be discussed. The fundamentals of equine ration formulation will be delivered to enable Learners to select suitable feedstuffs and prepare diets for different exercise and life stages. Learners will demonstrate that they can work effectively as a member of a team.

How to safely handle horses for a range of different activities will be introduced and opportunities to gain essential practical skills will be provided. The principles of equine behaviour and their influence on handling and management of horses will be debated. Learners will become competent in preparing horses for a range of ridden work and for groundwork exercises. Practical skills including basic handling, grooming and fitting suitable equipment and rugs will be developed.

By the end of this unit, Learners will be able to work in a safe and professional manner within an equestrian environment. They will also be able to devise suitable diets for horses in a range of work levels, will become competent in handling and leading horses and preparing them for exercise and should be able to assess signs of health and disease.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Assess the nutritive needs of horses,*
- 2. Undertake routine care of horses in stabled and free-ranging environments.*
- 3. Assess and maintain the health and welfare of horses in stabled and free-ranging environments.*
- 4. Prepare horses for exercise and stabling.*

Veterinary Nursing II

Unit level (MQF): 5

Credits: 6

Unit Description

Veterinary Nursing II builds upon the knowledge and understanding of patient and nursing care provided in Veterinary Nursing I. The needs of advanced nursing cases and the care they require should be covered in detail. This will include medical cases, recumbent patients, infectious patients requiring barrier nursing and the provision of fluid therapy. Design of nursing care plans will be undertaken and their benefits and limitations evaluated. How to give a range of medication including tablets, liquids and injections will be taught to facilitate detailed patient care.

The unit will explore methods and modes of communication that can occur within a veterinary practice between colleagues and with clients. Learners will develop the ability to recognise their own preferred communication style and will be able to analyse the advantages and disadvantages of verbal and non-verbal communication methods. The influence of religion, socio-economics and culture upon communication, client behaviour and decision-making will be considered.

The third Learning Outcome will give the learners a general overview of veterinary procedures related to large farm animals. Such veterinary interventions are essential to the farmer and the livestock industry. Porcine, bovine, ovine and caprine groups will be discussed.

Throughout the unit learners should be encouraged to develop critical and evaluative thinking. Learners should be encouraged to take responsibility for initiating and completing tasks and should be encouraged to carry out individual research to consolidate and enhance their knowledge, understanding and skills. Finally, Learners will build upon the knowledge and practical skills gained in Veterinary Nursing I to enable them to prepare and maintain diagnostic environments for use including x-ray equipment and laboratory facilities

Learning Outcomes

On completion of this unit the student will be able to

1. *Evaluate factors which influence communication in the veterinary practice.*
2. *Analyse the requirements of advanced nursing cases to produce suitable nursing care plans and implement these to promote health and welfare in advance nursing cases.*
3. *Outline clinical and surgical procedures on large farm animals.*
4. *Prepare diagnostic environments for use.*

Animal Biology and Physiology

Unit level (MQF): 5

Credits: 6

Unit Description

The aim of this unit is to deepen the student's understanding of the complexities of the animal body and how the biological systems integrate to respond to the external environment. It is only by fully appreciating the intricate associations between all of the biological systems within an animal's body that one can begin to fine tune management and husbandry procedures such that animal health and welfare can be maintained at an optimum regardless of the expectations being placed upon that animal. Study of anatomy and physiology prepares the way for students to formulate their own opinions on husbandry practices that they encounter within the work place as it provides the scientific context within which to orientate their judgments. The unit builds on knowledge and understanding obtained through study at level 4, and in many cases incorporates the study of evolutionary change in response to ecological factors. It begins by examining the physiology of the locomotory system, and the numerous adaptations to the support and movement systems that exist in the diversity of the animal kingdom.

The unit then turns to the cardiovascular system and their adaptations, and draws on chemical principles studied previously and elsewhere within the programme to explain oxygen and carbon dioxide exchange mechanisms. Reproduction is often the focal point of the performance expectations of many animals and a full appreciation of this phase of life is critical to successful husbandry and management. Underpinning all of the biological systems is the network of control pathways, which is explored through the homeostasis outcome. Finally the processes used by an animal to acquire raw materials and eliminate waste are explored. Throughout the unit, strategies used by animals to morphologically and physiologically adapt to a particular environment are discussed.

Learning Outcomes

On completion of this unit the student will be able to

1. *Describe the variety of solutions that have evolved to provide support and locomotion in animal bodies.*
2. *Discuss the cardio vascular system and its adaptations in a range of animal species.*
3. *Describe the reproductive processes in a range of animal species.*
4. *Discuss homeostatic processes and mechanisms to obtain and excrete materials from the body.*

Agriculture Policy

Unit level (MQF): 5

Credits: 3

Unit Description

This unit provides an overview of the policy context for agriculture, including national, European and international policies, to summarise the interface of the various policy frameworks. Students are first introduced to the notion of pricing of agricultural products and the determinants of these prices.

With a broad overview of the international picture, the role and development of key organisations associated with global agriculture and trade will be depicted. Using case studies, the impact of these on worldwide agriculture, and the roles of organisations such as the Food and Agriculture Organisation (FAO), the World Trade Organisation (WTO), and the European Free Trade Association (EFTA) will be explored. The unit will also provide an introduction to global agricultural trade, for students to further understand the role of market intervention and the role of the WTO for negotiations and agreement.

An agricultural policy is a vital tool in the development and vision of the agricultural sector of any country. The building up and implementation of this strategy together with an analysis of the various issues contained in such policies will be undertaken with special emphasis on Malta's situation and the issues facing the Maltese agricultural sector.

Learning Outcomes

On completion of this unit the student will be able to

1. *Assess the drivers of agricultural product prices.*
2. *Analyse the role of key organizations involved in global agricultural policy and trade.*
3. *Describe the process followed for the drafting and implementation of an agricultural.*
4. *Evaluate different issues targeted in an agricultural policy.*

Food Flavour and Tasting

Unit level (MQF): 5

Credits: 6

Unit Description

Different types of foods contain thousands of chemical compounds that are responsible to the flavour of the food consumed. There established methods to determine the nutritional compositions of foods, but to reach sensory approval by consumers is far more complicated due to the number of variables in the process such as colour, texture, and shape, flavour of consumed foods. It is also important not to forget the cultural background, dietary habits of consumers and on top of that foodstuff undergoes various chemical and biochemical reactions during storage, transport, and processing. All of these could result in poor or improved sensory experience by the consumer which adds to the complexity.

This unit will allow the learners to understand what components in food is responsible in giving its characteristic tastes. Therefore the main aim would be to give a broad overview of the relation between colour, food flavor and sensory insight.

The learners taste and aroma/smell senses will be put to test through practical sessions in which they will learn about the sensory evaluation process and the different taste panel methods such as difference, ranking tests and category scaling.

Learning Outcomes

On completion of this unit the student will be able to

1. *Describe how flavour is generated.*
2. *Explain the dynamics of flavor perception.*
3. *Discuss the process used for the classification of food items.*

Animal Behaviour

Unit level (MQF): 5

Credits: 6

Unit Description

This unit aims to provide learners with an understanding of the principles of animal behaviour and animal training. This is a theoretical unit which will allow learners to demonstrate that they have the necessary depth of knowledge of animal behaviour and how this influences training, husbandry and management.

This unit is relevant to learners wishing to further develop their knowledge of the scientific basis of animal behaviours and its application to animal training. On completion of the unit learners will understand the scientific theories underpinning animal behaviour including historical interpretation as well as developing knowledge of the biological controls of animal behaviours.

Learners will demonstrate the ability to practically apply the principles of animal behaviour assessment to the design of an animal behaviours study and interpretation of data. The learner will be able to undertake the evaluation and analysis of data including statistical analysis and graphical representation.

Learners will develop an understanding of the significance and implications of the key concepts of altruism and symbiotic association and roles of communicative behaviour in a range of species. Learners will explore the theoretical links to the animal behaviours of predation, feeding and reproduction.

Finally learners should have the underpinning knowledge of how to apply learning theories to animal training. The practical value of applied animal behaviour in a range of situations including various management systems.

Learning Outcomes

On completion of this unit the student will be able to

1. *Define & explain the scientific basis for controlling animal behaviour.*
2. *Analyse and demonstrate the principles and practice of animal behaviour assessment.*
3. *Understand the importance of functional behaviour to social interaction, feeding and reproduction in a range of species.*
4. *Evaluate the implications of animal behaviour for animal husbandry and management.*

Genetics and Animal Breeding

Unit level (MQF): 5

Credits: 6

Unit Description

This unit aims to build on the students' broad understanding of the principles of genetic inheritance and develop their understanding of the mechanisms that can be employed to influence breeding outcomes. By understanding some of the more complex theories of genetic inheritance they are better able to direct and manage breeding regimes, and predict outcomes with greater accuracy. To do this, students will study the underlying principles of evolutionary genetics, perfect their ability to derive and use population genetics, and discuss the statistical relevance of such figures. The application of these figures will be examined, particularly their increasing importance in conservation genetics, captive breeding programmes and the prevention of inbreeding in closely related breed lines. Students will develop an ability to apply and appreciate the techniques of molecular genetics in contexts such as the management of disease, improvement of production traits and conservation of declining populations. An important aspect of this module is a close examination and discussion of the ethical and moral issues raised by these topics, such that they will be able to derive informed and justified responses to these concerns within a variety of related contexts.

Learning Outcomes

On completion of this unit the student will be able to

1. *Describe the main aspects of gene expression, explain mechanisms of cellular control and discuss how evolutionary biology underpins the study of population statistics, and understand how aspects of gene expression influence how criteria are selected for breeding programmes.*
2. *Consider possible influences for breeding animals, and design and evaluate breeding experiments.*
3. *Assess and evaluate the role of genetic selection in animals and investigate the potential of genome projects, genetic engineering and genetic analysis, for a range of species.*
4. *Debate the moral and ethical issues relating to breeding animals and consider commercial and legal constraints within the biotechnology industry when justifying the use of available technologies.*

Emergency Nursing and Anaesthesia

Unit level (MQF): 5

Credits: 6

Unit Description

This unit provides the Learner with a fundamental knowledge and understanding of different types of veterinary anaesthesia. The theory of anaesthesia will be reviewed and will be applied to evaluate how to effectively monitor the planes of anaesthesia in a range of animal species: dogs, cats, exotic animals and horses. Learners will be able to define anaesthesia terminology and evaluate the anaesthetic status of individual animals. They will also be able to identify the components of anaesthetic machines, different types of breathing and re-breathing anaesthetic circuits, a range of endotracheal tubes and anaesthetic monitoring equipment and explain how to assess their functionality. Learners will become familiar with anaesthetic volatile and induction agents, emergency anaesthetic drugs and analgesics. An appreciation of why different drugs are used and potential side effects that can occur during their use will be developed.

By the end of this unit, Learners will be able to assess and follow procedures to stabilize a patient in an emergency room. They will also learn how to diagnose the cause of the emergency and the method to follow to ameliorate the health condition of the patient. The learner will then learn how to define first aid and provide examples of conditions that are categorised as first aid emergencies. Learners will be able to explain the principles and rules of animal first aid and the concept of triage, and use this information to assess and prioritise first aid scenarios. The provision of first aid for cardiac and respiratory emergencies will be reviewed in detail including describing how to undertake cardiopulmonary resuscitation. An overview of first aid actions and treatments for a range of minor first aid scenarios will be assessed.

Learning Outcomes

On completion of this unit the student will be able to

1. *Explain anaesthesia in animals.*
2. *Identify and prepare suitable equipment for anaesthesia in animals.*
3. *Describe the nursing of animals in emergency and critical care.*
4. *Apply knowledge and understanding of first aid to propose effective solutions to common first aid scenarios in animals.*

Exotic Animals

Unit level (MQF): 4

Credits: 6

Unit Description

This unit provides an introduction to the key principles of exotic animal health and husbandry, to enable the Learner to manage exotic animal collections. A range of exotic species commonly kept as pets will be covered including: birds, mammals, reptiles, fish, amphibians and invertebrates.

Learners will be encouraged to debate the ethical and welfare arguments surrounding the keeping of exotic animals in captivity, to enable them to make informed judgements on exotic animal health and welfare, and the suitability of specific species as pets. Relevant legislation will be outlined. Learners will develop the skills to be able to appraise if housing provided for common exotic species provides the husbandry requirements required to promote health and welfare.

Knowledge and understanding of exotic animal normal behaviour and how behaviour can change related to housing and / or disease will be discussed. Learners will develop the essential knowledge and understanding of the nutritional requirements for a range of exotic species and should be able to apply these principles to provide diets which meet specific animal's nutritional requirements. The clinical symptoms of nutritional disorders will be provided to enable Learners to judge if animals are suffering from deficiencies or malnutrition. Modes and methods of feeding and provision of water will be discussed. Learners should be able to identify common diseases which affect exotic animals, outline their clinical signs and explain relevant treatment options.

By the end of the unit, learners will be able to perform a health check on exotic animal species to enable them to effectively assess exotic animal health. Learners should also be able to debate the suitability of exotic animal housing and diet.

Learning Outcomes

On completion of this unit the student will be able to

1. *Define and debate the impact of legislation relevant to ownership and keeping of exotic animal species.*
2. *Demonstrate competent handling and restraint for a range of exotic animal species.*
3. *Prepare suitable management regimes, including provision of food and water, for a range of exotic animal species.*
4. *Identify signs of health and disease in a range of exotic animal species.*

Practical Nutrition and Feed Formulation

Unit level (MQF): 5

Credits: 6

Unit Description

This unit focuses on the nutrient requirements of domestic animals and livestock. Providing animal feed with the correct formulation of nutrients is essential for the welfare of the animal and costing efficiencies of the animal-rearing business.

This Unit is designed to enable students acquire the skills of analytical thinking and scientific enquiry. Through this course students will have an overall understanding of animal nutrition and feed formulations. The approach of this Unit is to not only provide content and understanding to the student but also teach the student problem solving and investigation skills. The Practical Nutrition and Feed Formulation Unit covers animal nutrition needs, animal feed market supply, the relevance of correct ingredient formulation to animal health and feed formulations. Learners who complete this unit will be able to draw on the understanding of the key areas of animal nutrition and apply the abilities of scientific enquiry to practical studies.

The Practical Nutrition and Feed Formulation Unit is a core unit of the in the Higher National Diploma in Animal Management and is also available as a free-standing Unit. This unit is relevant to students wanting to learn more about the dietary needs and nutritional requirements of a range of animals. Students are encouraged to research current animal nutrition issues and thus develop their scientific literacy. On completion of the Unit, learners will value the importance of market supply and demand, good nutrition on the health of animals, analytical methods for determining nutrient quantities and the factors affecting the pricing of ingredients.

Learning Outcomes

On completion of this unit the student will be able to

1. *Identify the nutritional needs of domestic and livestock animals.*
2. *Distinguish between the different feedstuffs and their attributes.*
3. *Discuss the importance of suitable feed planning.*
4. *Analyse the role of feed formulations in animal diets.*

Processing of Animal Products

Unit level (MQF): 5

Credits: 6

Unit Description

For centuries before processing of animal products has been taking place where people have using meat and dairy products from the animals and adding value to them.

This unit provides an understanding of animal products (meat, dairy, egg and fish), legislation and problems with processing and quality parameters. It will look at how food has evolved from a simple fresh product to a more complicated added value products and how safety and quality of the developed product is key to its success. The unit is relevant to learners wishing to further their knowledge of the different food processing methods, principles and shelf-life control and stabilisation.

Drying, pickling, curing, salting, sugaring, canning and fermenting are all techniques that have been essential activities throughout history aiming at killing or inhibiting the growth of microorganisms prolonging the shelf-life of the product.

This unit will explore how each of those techniques work, the benefits, the limitations from food safety and quality perspective. It will also provide a practical guideline step by step on how learner can produce it themselves. Learner will also be introduced to the different bee products and their amazing benefits discovered by scientists.

Finally learners should have the underpinning knowledge and understanding to make food using all the main traditional preservation method.

Learning Outcomes

On completion of this unit the student will be able to

1. *Demonstrate an understanding of global supply and demand for animal products.*
2. *Review the methods used to evaluate the quality of animal products and assess the processing, adding value and marketing of animal products.*
3. *Describe the meat and dairy processing procedures that convert the raw animal product into a saleable food item.*

Veterinary Surgical Nursing

Unit level (MQF): 5

Credits: 6

Unit Description

Learners will develop the essential knowledge and understanding to function effectively in a veterinary surgical environment. Design of operating theatres will be considered as will the importance of good theatre practice from members of the veterinary team to maintain a sterile environment and reduce the risk of infection and contamination to the patient. Categories of operations and their associated risks will be determined to enable Learners to plan surgical operation schedules. Learners will apply their underpinning knowledge and understanding of hygiene to the surgical environment, to prepare theatres ready for use and to undertake daily, weekly and monthly cleaning and maintenance of the operating environment.

By the end of the unit they will be able to describe and demonstrate aseptic preparation of the surgical environment, the patient and the veterinary team. This will include gowning and gloving of the theatre team and appropriate surgical clips and aseptic preparation of the patient. Theoretical knowledge of different surgical procedures will be applied to enable students to demonstrate different surgical positions and how to drape the patient whilst maintain an aseptic incision site for a range of common operations. Learners will recognise common surgical instruments and equipment, and will be able to describe their function. The principles of sterilisation will be included and learners will understand how different methods are applied to prepare instruments and drapes aseptically ready for future use.

Learning Outcomes

On completion of this unit the student will be able to

1. *Explain the principles of regular maintenance and how to prepare a sterile veterinary theatre environment including veterinary surgical instrumentation and equipment ready for use.*
2. *Demonstrate knowledge and understanding of common surgical procedures undertaken in the dog, cat, exotic animals and horses.*
3. *Prepare the veterinary team and patients for sterile operations.*
4. *Identify and analyze the role of the nurse after the operation.*

Business Management & Work Experience

Unit level (MQF): 5

Credits: 6

Unit Description

This unit aims to provide learners with the skills and knowledge of business management, and further through work experience equip them with workplace practice environment. The unit is divided into two key parts - the first will address Business Management and Agribusiness finance aspects and the second will provide learners with the opportunity to develop first-hand experience in a workplace environment where they will have the opportunity to be engaged with all aspects of business activities.

Business Management & Finance

- Small Business performance investigation
- Budgeting and Financial Statements
- Loans

Work Experience

- Evaluate and monitor progress (self and business organisation)

Overall the unit equips the learner with a number of skills and attributes, these include business profiling, business assessment skills, management of employees; understanding the importance of capital budgeting as well as providing business recommendations; understanding financial statements and exploring the process of taking and re-paying a loan

The unit further provides the learner with the opportunity to gain work place experience in an organisation, allowing them to gain on the jobs skills and an opportunity to evaluate their performance in a workplace environment.

Learning Outcomes

On completion of this unit the student will be able to

1. *Investigate and assess business performance.*
2. *Demonstrate skills to address various agri-business' financial attributes.*
3. *Explain how an agri-business can benefit from and manage a loan.*
4. *Evaluate workplace activities and own work experience performance.*

Wildlife Sciences and Conservation

Unit Level (MQF): 6

Credits: 6

Unit Description

This unit delves into the science of wildlife management and conservation. With a growing concern on biodiversity loss, numerous entities are prioritizing conservation to restore and maintain populations of species. This unit prepares students for work related to habitat management and biodiversity conservation. It starts with an overview of evolutionary mechanisms that played a significant role in giving rise to the myriad of species we currently have in our midst. The unit then seeks to shed light on the importance of biodiversity and on the challenges that are contributing to its decline. Subsequently, a more technical analysis of biodiversity will be undertaken with the dynamics of species populations and the factors affecting their distribution discussed at length. The unit closes with an overview of measures that are commonly used to conserve species followed by the different methods that are usually used to conduct an ecological survey.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Discuss evolutionary processes that gave rise to different plant and animal species.*
2. *Understand how wildlife can be valued as a resource and the factors threatening it.*
3. *Explain strategies that can be utilized to conserve wildlife and their respective habitats.*
4. *Conduct a study of habitats and wildlife population.*

Business Planning

Unit Level (MQF): 6

Credits: 6

Unit Description

Business planning is not just for financing purposes. This course will provide students with a broader view of business planning as a tool that helps business people in making their decisions.

This course should also help students to begin to think outside the box. Almost anyone can purchase a business plan software program and fill in the blanks. Attendees of the course should be able to create their own blanks by finding their way and sharing their passion for business.

With a blend of management, marketing and finance, this course takes students through the entire process of conceiving and planning a business venture. They will learn-by-doing through development of their own business plan project. The business plan has to be developed through completion of assignments.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Collect and analyse data that will help with taking decisions in a particular business.*
2. *Understand the importance of strategy in business management.*
3. *Develop the operational plan of a business venture.*
4. *Make decisions of a financial nature based on available information.*

Rural Development

Unit Level (MQF): 6

Credits: 6

Unit Description

During this course the student will be learning the main concepts of rural development and how it is contributing to the local and EU in general. Besides that other aspects which are linked to rural development will also be discussed such as the contribution of agriculture, the challenges and opportunities of rural livelihoods, natural resources and policies and legislation. Case studies will be an important learning tool so that students can link better the concept of the subject in practice.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Describe the origins and evolution of rural development over time.*
2. *Describe EU and local agricultural and rural development policies and their contribution towards rural development.*
3. *Discuss the contribution of rural economic activities towards rural development.*
4. *Explain the contribution of rural areas towards the quality of public goods and the use of natural resources.*
5. *Debate the challenges and opportunities of rural areas.*

Development of Land Based Activities

Unit Level (MQF): 6

Credits: 6

Unit Description

This unit is essential for learners to understand the process that must be taken if they decide on setting up a business related to the rearing and management of animals. This unit mainly deals with the following enterprises: animal farms, pet shops, animal sanctuaries and horse stables. It starts by providing learners with a thorough understanding of the administrative procedures that must be followed for an animal-related business to be set up. It spans the whole process- from acquisition of land or premises to taxes and animal registration. The second module deals with the financial aspects of setting up business with a detailed overview of taking loans, having a business plan and applying for start-up funds. The unit then delves into the development of a site and provides a detailed explanation of the range of legislations and procedures that must be followed to design a farm, animal sanctuary or stable. The last module goes into more detail on the development, design and management of pet shops.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Manage administrative procedures needed to set up and run an animal-related enterprise.*
2. *Manage financial procedures needed to set up and run an animal-related enterprise.*
3. *Choose the best design for an animal-related enterprise in line with relevant legislation.*
4. *Design and management of a pet shop.*

Animal Welfare-Ethics and Legislation

Unit Level (MQF): 6

Credits: 6

Unit Description

The unit starts by describing the different schools of thought that have evolved and which perceive the animal ethics notion from differing angles. This will provide the student with a good understanding of the evolution of these philosophies and how these are applied nowadays to tackle a wide variety of issues related with the treatment and exploitation of animals as will be discussed in the second part of the unit which will delve into the various issues that constitute moral dilemmas for the human race.

In the third and fourth module, the unit will discuss animal welfare of various species and provide the learners with a thorough understanding of the factors affecting welfare and how different species of animals have different needs for them to live and prosper healthily and in good welfare conditions. This will be backed by overviews of various local and European legislations which seek to make sure that animals are kept in good conditions while they are under the care of their owners.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Distinguish between different animal ethics' schools of thought.*
2. *Discuss major issues and challenges related to animal ethics.*
3. *Assess animal welfare conditions of a range of farm and lab animals.*
4. *Understand the roles of various legislations as they relate to the ethical treatment of animals and to the maintaining of good animal welfare.*

Production Animal Livestock Management

Unit Level (MQF): 6

Credits: 6

Unit Description

This unit will provide learners with a thorough investigation of what it takes to manage an animal farm. Such enterprises are unique in their management requirements with different animal species having different needs which must be met through different means. This unit will first consider the financial management aspect of running a farm. This will be accompanied by discussions on the importance of record keeping on farms and how such records can be kept and analysed. The second and third modules will go into the management of the farm's environment and the animals' health respectively. Various procedures, protocols, schedules and measures that can be used to keep the farmed animals in an optimal state of welfare will be analysed. The unit ends with an overview of the operations that are customarily undertaken in farms of the different animal species and how precise management of such operations are essential for the economic viability of the farm.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Analyze farms' financial management systems and record keeping.*
2. *Assess the management of a farm's environment.*
3. *Understand how animal health is managed in livestock farms.*
4. *Compare farm operations for different livestock species.*

Animal Health, Diseases, Epidemiology and Management

Unit Level (MQF): 6

Credits: 6

Unit Description

This unit highlights the importance of adequate animal health and the significance of preventing disease and injury. Diseases and conditions are subdivided into three main areas, infectious, metabolic diseases and mechanical injuries and traumas. The unit aims to provide knowledge and understanding of the general epidemiological facets of diseases as well as explaining the process of common specific diseases/conditions and injuries of the main companion and farm animals.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Understand the disease process, different nature of diseases and the role of the immune system in animals.*
2. *Explain the process and management of common metabolic disorders of the main companion and farm animals.*
3. *Explain the process and management of common infectious diseases of the main companion and farm animals.*
4. *Explain the appropriate management and cure of common injuries of the main companion and farm animals.*