



Institute of Animal Technology

Syllabus

IAT Diploma in Laboratory Animal Science and Technology (2023)

Level 4 (Qualification Number 610/2717/0)

Level 5 (Qualification Number 610/2723/6)

Level 6 (Qualification Number 610/2724/8)

IAT Levels 4-6 Diploma in Laboratory Animal Science and Technology

Unit title	Level	Credits
Training and developing staff in the workplace	4	15
Assessing competence in the workplace	4	15
Laboratory skills	4	10
Necropsy skills	4	10
Researching data and using information	4	10
Developing communication skills	4	20
Aquatics	4	20
Application of the 3Rs to the severity assessment framework	4	20
Application of the Animals (Scientific Procedures) Act	4	20
Animal welfare legislation	4	20
Physiology of pain and distress in laboratory animals	4	20
Advanced animal husbandry, care and enrichment practices	4	20
Introduction to Genetically Altered models	4	15
Genetics for Laboratory Animal Research	4	20
Experimental design and statistics	5	30
Managing health and safety in the animal facility	5	10
Introduction to first line management	5	15
Managing performance for first line managers	5	15
Developing coaching and mentoring skills for first line managers	5	20
Motivational skills for first line managers	5	15
Introduction of budgeting and accountancy	5	15
Minimally invasive procedures without anaesthesia	5	20
Genetically altered laboratory animals – breeding and colony management	5	20
Principles of surgery	5	20
Anaesthesia for surgical or prolonged procedures	5	20
Anaesthesia for minor procedures	5	20
Recognition of pain, suffering and distress – species specific	5	20

Managing and developing teams	6	20
Strategic thinking	6	15
Influencing people with integrity	6	15
Project planning – principles and practices for success	6	20
Experimental design for in vivo research	6	20
Pain and distress in laboratory animals	6	30
Thesis / project	6	30
Managing and driving individual performance	6	15
Genetically altered laboratory animals – models, phenotyping principles and preclinical models	6	30
Establishing a Culture of Care in research animal facilities	6	10
Managing change	6	20

Academic assessment methods can include but are not restricted to:

- case studies
- role play
- time limited tests
- examinations
- assignments
- reports
- integrated work activities
- viva voce
- projects
- presentations

TITLE	TRAINING AND DEVELOPING STAFF IN THE WORKPLACE		
OFQUAL NO:	K/650/7293	LEVEL	4
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)	N/A		
Location of the unit within the subject/sector classification system	Animal Technology		
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)	<p>This unit will introduce the learners to the theory and practice that underpins effective work-based training.</p> <p>Learners will leave the course with sufficient knowledge, confidence and skills so they can design, deliver and set assessments to effectively develop work-based knowledge, attitudes and skills effectively.</p>		

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Evaluate the need to train and develop people in the workplace.
2	Devise appropriate and productive training sessions and programmes.
3	Apply the principles of training in the workplace to develop knowledge, skills or behaviours required by their organisation.

TITLE	ASSESSING COMPETENCE IN THE WORKPLACE		
OFQUAL NO:	L/650/7294	LEVEL	4
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)		N/A	
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit will introduce the learners to the theory and practice that underpins effective assessment of learning and work based practice. Learners will leave the unit with sufficient knowledge, confidence and skills to assess learning and work-based knowledge, attitudes and skills effectively.	

	Learning Outcomes The learner will:
1	Critically evaluate the meaning of competency.
2	Discuss the use of different assessment strategies.
3	Devise assessment strategies appropriate to the learning objectives and assessment criteria.
4	Apply the principles of effective competency assessment in the workplace to assess knowledge, skills or behaviours required by their organisation.
5	Review quality and assure the training process.

TITLE	LABORATORY SKILLS		
OFQUAL NO:	T/650/7297	LEVEL	4
CREDIT VALUE	10	Total learning time	100 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The aim of this unit is to provide the learner with the ability to demonstrate the skills required to carry out a range of common laboratory skills safely and accurately.	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Demonstrate safely, the skills required to use laboratory equipment (e.g. light microscope, centrifuge, PCR machine) effectively for routine animal husbandry or scientific purposes.
2	Calibrate and use common laboratory equipment.
3	Demonstrate correct preparation of different types of formulations.
4	Be able to collect data with appropriate levels of accuracy.
5	Understand the importance of correctly and accurately reporting results.

TITLE	NECROPSY SKILLS		
OFQUAL NO:	L/650/7301	LEVEL	4
CREDIT VALUE	10	Total learning time	100 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The aim of this unit is to provide the learner with the ability to demonstrate the skills required to support the NVS or a research project with the collection of tissues or identification of health problems.	

	Learning Outcomes The learner will:
1	Have a knowledge of the anatomical structure of the species in their care and be able to describe the purposes for and procedure of necropsy.
2	Apply their knowledge of comparative anatomy to perform a necropsy and be able to identify how various tissues can be processed.
3	Describe common signs of ill health.

TITLE	RESEARCHING DATA AND USING INFORMATION		
OFQUAL NO:	M/650/7302	LEVEL	4
CREDIT VALUE	10	Total learning time	100 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit will provide the learner with the knowledge to find and then evaluate the reliability of data and the skills to use these data effectively in the workplace.	

	Learning Outcomes The learner will:
1	Critically evaluate sources of information.
2	Appropriately reference and acknowledge sources of information.
3	Understand how to review published journal articles.

TITLE	DEVELOPING COMMUNICATION SKILLS		
OFQUAL NO:	R/650/7303	LEVEL	4
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>This unit's purpose is to develop the learner's ability to communicate in a range of situations relevant to their workplace.</p> <p>This unit's aim is to ensure that those completing it can effectively deliver information in a professional manner across a range of situations.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Evaluate and apply models of communication.
2	Identify potential barriers to effective communication and apply suitable solutions.
3	Evaluate the effectiveness of the routes of communication used.
4	Effectively present information to individuals and groups, both in writing and orally, in person and at a distance, using technology such as Zoom.
5	Identify effective communication strategies for a range of different stakeholders.

TITLE	AQUATICS		
OFQUAL NO:	T/650/7304	LEVEL	4
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>The unit will provide the learner with the opportunity to investigate the housing, husbandry and use of aquatic species in a research environment.</p> <p>This unit delivers a more in-depth knowledge of animal care practices in line with EU module 23.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Describe the housing and husbandry of common aquatic species.
2	Discuss the use of aquatic species in a research environment.
3	Describe common problems related to housing and welfare of aquatic species and methods for minimising the risks of these occurring.
4	Identify potential disease risks in the aquatics in a research environment.
5	Devise appropriate breeding programmes for aquatics species given specified conditions.
6	Know procedures for the safe and legal transportation of aquatic species including embryos and different life stages.

TITLE	APPLICATION OF THE 3RS TO THE SEVERITY ASSESSEMENT FRAMEWORK		
OFQUAL NO:	Y/650/7305	LEVEL	4
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>This unit provides an overview of the severity assessment framework, its contribution to improving animal welfare, promoting implementation of the Three Rs and enhancing transparency.</p> <p>It provides the following information on the nature of procedures: the prospective classification of the severity of procedures, why the continuous assessment of severity is a key component of the legislation and reporting of actual severity.</p> <p>It explains: the principles governing severity assessment, the concept of direct and contingent suffering and the concept of cumulative severity.</p> <p>It is intended to complement, draw together and expand on the information and key concepts from other modules to provide a stand-alone module on severity assessment.</p> <p>The unit content aims to be accessible to all those who require a deeper understanding of the severity assessment framework.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Demonstrate an understanding of what constitutes a scientific procedure and how the severity of such procedures is classified prospectively.
2	Demonstrate an understanding of the nature and value of the severity assessment framework.
3	Apply the severity assessment framework.

TITLE	APPLICATION OF THE ANIMALS (SCIENTIFIC PROCEDURES) ACT 1986		
OFQUAL NO:	A/650/7306	LEVEL	4
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>This unit will broaden and deepen knowledge beyond that in UK '1' and EU 1 modules. It will develop the reflective and analytical skills allowing students to contribute fully to the implementation of the Act with regards to the 3Rs, effective animal welfare and good science.</p> <p>This unit aims to provide an understanding of ASPA and the legal responsibilities of the personnel involved.</p> <p>It will cover the responsibilities of those holding 'named' positions and those licenced under ASPA to carry out procedures on animals, as well as those not carrying out procedures but taking care of animals, or killing animals. It should be considered alongside other relevant animal legislation.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Discuss in detail the Animals (Scientific Procedures) Act 1986 and their responsibilities under it.
2	Critically appraise the role of the Animal Welfare Body in maintaining the health and wellbeing of laboratory animals and minimising any adverse effects of experimental or scientific procedures on animals.
3	Evaluate the impact of legislation on the housing and welfare of laboratory animals.

TITLE	ANIMAL WELFARE LEGISLATION		
OFQUAL NO:	D/650/7307	LEVEL	4
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit aims to provide an understanding of how other legislation interacts with ASPA and impacts on animals housed in animal facilities that are not covered by ASPA.	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Discuss how legislation interacts with the Animal (Scientific Procedures) Act 1986
2	Describe measures for ensuring compliance with the relevant legislation.

TITLE	PHYSIOLOGY OF PAIN AND DISTRESS IN LABORATORY ANIMALS		
OFQUAL NO:	F/650/7308	LEVEL	4
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>This unit aims to provide learners with an understanding of the physiological processes relevant to pain and distress in laboratory animals.</p> <p>It will include the physiology of nociception, autonomic nervous system responses to stress and distress including an overview of the physiology and pharmacology of analgesics and other methods used to alleviate pain and distress.</p> <p>The unit is of relevance to technical staff who are required to monitor animals during procedures and particularly to those acting as NACWOs or participating in the ethical review process in their institution.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Have a understanding of the physiological basis of nociception, pain, stress and distress.
2	Be aware of pharmacological methods used to control pain perception and support tissue recovery.
3	Describe the effect of pain on animal welfare and scientific results.

TITLE	ADVANCED ANIMAL HUSBANDRY, CARE AND ENRICHMENT PRACTICES		
OFQUAL NO:	H/650/7309	LEVEL	4
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit will enable students to understand the principles of animal care (including those pertinent to laboratory animals such as supplementary regimes), housing and handling and biosecurity.	

	Learning Outcomes The learner will:
1	Understand the use of refined methods for handling different species and show an appreciation of why these methods are preferred over others.
2	Demonstrate a thorough understanding of appropriate housing and how animal welfare is maintained in the animal facility.
3	Understand different types of enrichment, its uses and how to develop an enrichment regime.
4	Understand the basis of biosecurity efforts, the risks and possible causes of infection outbreaks.
5	Understand types of barriers and how to maintain and monitor them.

TITLE	INTRODUCTION TO GENETICALLY ALTERED MODELS		
OFQUAL NO:	L/650/7310	LEVEL	4
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The unit will provide an introduction to genetically altered terminology and processes. It is intended to provide those with little experience in the area with the knowledge they need to access more complex methodologies in the creation, maintenance and use of genetically altered strains.	

	Learning Outcomes The learner will:
1	Briefly describe the historical development of GA models.
2	Describe the importance of background information of GA models.
3	Describe methods for creating and maintaining GA models.
4	Understand why mice are widely used in animal research including the history of laboratory mice.

TITLE	GENETICS FOR LABORATORY ANIMAL RESEARCH		
OFQUAL NO:	M/650/7311	LEVEL	4
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		To learn the key genetic principles required to be able to support work with genetically altered animals in research with a focus on mouse models.	

	Learning Outcomes The learner will:
1	Describe the structure of a gene in the context of DNA molecules, chromosomes and the cell structure.
2	Discuss the processes involved in protein synthesis and DNA replication.
3	Describe the importance of cell division.
4	Devise breeding programmes for maintaining and delivering inbred and outbred mouse strains

TITLE	EXPERIMENTAL DESIGN AND STATISTICS		
OFQUAL NO:	R/650/7321	LEVEL	5
CREDIT VALUE	30	Total learning time	300 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit will provide learners with an introduction to the principles of good experimental design and reporting. The unit aims to develop the scientific skills and understanding of the learner by encouraging them to effectively research, review, analyse and debate current scientific theories from the available published literature and draw accurate conclusions or action plans to further scientific knowledge or support animal welfare.	

	Learning Outcomes The learner will:
1	Discuss the importance of good experimental design on animal welfare.
2	Compare published experiments against the ARRIVE guidelines.
3	Design, manage and report their own experiment.
4	Evaluate methods used to collect data.
5	Evaluate the use of techniques to present data.

TITLE	MANAGING HEALTH AND SAFETY IN THE ANIMAL FACILITY		
OFQUAL NO:	T/650/7322	LEVEL	5
CREDIT VALUE	10	Total learning time	100 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>The aim of this unit is to provide the learner with the ability to demonstrate knowledge and understanding of the main concepts of health and safety management systems and of the benefits of a positive health and safety culture in the workplace to aid staff welfare.</p> <p>This unit is designed to give learners a detailed and broad understanding of health and safety in the workplace and the legislation that governs it.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Demonstrate an understanding of UK Health and Safety law within the workplace.
2	Demonstrate the principles of managing risk using a 5 step risk assessment.
3	Demonstrate the knowledge to operate high containment facilities in accordance with health and safety legislation.

TITLE	INTRODUCTION TO FIRST LINE MANAGEMENT		
OFQUAL NO:	Y/650/7323	LEVEL	5
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The unit will develop knowledge, skills and behaviours appropriate for a first line manager. It will allow the learner to develop their abilities to reflect on basic problems encountered by a first line manager and provide them with techniques for minimising or overcoming these problems.	

	Learning Outcomes The learner will:
1	Demonstrate a knowledge of employment law in the place of your work and how it is applied within the workplace.
2	Discuss the principles for promoting equal opportunities in the workplace.
3	Discuss the principles of recruitment, development and retention of staff.
4	Discuss the importance of staff retention.
5	Reflect on the importance of management styles and behaviours.

TITLE	MANAGING PERFORMANCE FOR FIRST LINE MANAGERS		
OFQUAL NO:	A/650/7324	LEVEL	5
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The aim of this unit is to develop the learner's confidence, knowledge and skills to improve work based performance and support the development of their staff.	

	Learning Outcomes The learner will:
1	Demonstrate the appropriate application of different tools available to first line managers to supervise and motivate staff within the workplace.
2	Apply the principles of effective communication in the workplace.
3	Effectively delegate tasks to staff within the workplace.
4	Develop effective working relationships within the workplace.

TITLE	DEVELOPING COACHING AND MENTORING SKILLS FOR FIRST LINE MANAGERS		
OFQUAL NO:	F/650/7326	LEVEL	5
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The unit is designed to support the development of management coaching and mentoring skills and to identify the links between coaching, mentoring and the achievement of the business goals.	

	Learning Outcomes The learner will:
1	Discuss the principles, skills and impact of coaching and mentoring in the workplace.
2	Use a coaching and mentoring model to plan a coaching and mentoring relationship with suitable candidates.
3	Demonstrate effective coaching and mentoring processes.
4	Evaluate the coaching and mentoring process.

TITLE	MOTIVATIONAL SKILLS FOR FIRST LINE MANAGERS		
OFQUAL NO:	H/650/7327	LEVEL	5
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit will develop the skills, knowledge and behaviours of the learner in engaging and motivating their teams. The unit will look at theories of motivation and engagement strategies.	

	Learning Outcomes The learner will:
1	Evaluate theories of engagement and motivation strategies.
2	Discuss causes of dissatisfaction and demotivation.
3	Plan and manage a motivation and engagement training programme.
4	Measure and evaluate the success of engagement and motivational programmes.

TITLE	INTRODUCTION OF BUDGETING AND ACCOUNTANCY		
OFQUAL NO:	J/650/7328	LEVEL	5
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The unit will provide the learner with the knowledge and skills to understand basic budgeting and budget reporting processes. It is designed to give information on budgeting to enable the learner to plan and monitor budgets. It is not designed as an introductory course for those planning to switch to a career in finance or accountancy.	

	Learning Outcomes The learner will:
1	Discuss the importance of determining the costs of delivering their services and the types of costs to consider.
2	Discuss budgets and their use (and how they relate to objectives) also explain what is meant by objectives.
3	Discuss the role of financial reports and how to assess their content.

TITLE	MINIMALLY INVASIVE PROCEDURES WITHOUT ANAESTHESIA		
OFQUAL NO:	R/650/7330	LEVEL	5
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>This unit provides an introduction to the theory relating to minor procedures. It provides information about appropriate methods of handling and restraint and describes appropriate techniques for injection, dosing and sampling relevant to the species.</p> <p>It should provide information sufficient for learners to understand what will be required of them before they go on to be trained in the practical aspects of these skills whilst under supervision.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Discuss the impact of animal handling and restraint on animal welfare.
2	Describe techniques/procedures including, for example, injection, sampling and dosing techniques (routes/volumes/frequency), dietary modification, gavage, tissue biopsy, behavioural tests, use of metabolic cages.
3	Describe the need for rigour and consistency in conducting scientific procedures and the correct recording and handling of samples.
4	Discuss methods for minimising the impact on the animals subject to scientific procedures.

TITLE	GENETICALLY ALTERED LABORATORY ANIMALS – BREEDING AND COLONY MANAGEMENT		
OFQUAL NO:	T/650/7331	LEVEL	5
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		To learn the key principles in the breeding and maintaining genetically altered mice.	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Identify and analyse the importance of genetic background on the phenotype of genetically altered animals.
2	Plan breeding programmes to maintain a genetic alteration within a population according to principles of reduction and refinement.
3	Outline the basic principles of genotypes.

TITLE	PRINCIPLES OF SURGERY		
OFQUAL NO:	A/650/7333	LEVEL	5
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>This unit covers principles of pre-operative animal assessment and care, preparations for surgery including equipment preparation and aseptic technique and the principles of successful surgery.</p> <p>The unit provides information about possible complications, post-operative care and monitoring along with details of the healing process.</p> <p>It also covers more practical elements for example the demonstration of commonly used instruments and provides an opportunity for trainees to practice some of the practical aspects of surgical technique, such as methods of suturing, using appropriate non-animal models.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Describe the planning of surgical procedures and discuss the competencies required of all personnel involved.
2	Discuss possible causes of delayed or impaired wound healing or other post-surgical complications and describe ways in which these can be avoided or, if they occur, treated.
3	Demonstrate competence in surgical techniques, including ablations and incisions and their closure by methods appropriate to the tissue concerned.

TITLE	ANAESTHESIA FOR SURGICAL OR PROLONGED PROCEDURES		
OFQUAL NO:	D/650/7334	LEVEL	5
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)		This unit is linked to the Pain and Distress units, which provide information on the physiology of pain and distress that underpins some of the material included in this module.	
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>This unit provides information on the use of anaesthetics for surgical procedures. It also includes information on the use of anaesthetics to provide humane restraint during other, non-painful, procedures, such as imaging. After completion of this unit, participants should have an understanding of factors influencing the selection and application of anaesthesia for these procedures.</p> <p>Note: Because of the wide variability of laboratory animal species and strains, as well as anaesthetic agents, an appropriate anaesthetic regimen should be developed in consultation with a veterinarian.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Relate why anaesthesia is required for both surgical and non-surgical procedures.
2	Describe how different drug classes interact to produce the three components of the anaesthetic triad to different degrees, and how balanced anaesthesia might be best achieved by using combinations.
3	Describe methods to optimise post anaesthetic recovery to ensure a smooth and rapid recovery from anaesthesia.

TITLE	ANAESTHESIA FOR MINOR PROCEDURES		
OFQUAL NO:	H/650/7336	LEVEL	5
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit provides guidance and information to individuals who, during their work with animals, will need to apply sedation or short-term anaesthesia for a brief period and mild pain level procedure.	

	Learning Outcomes The learner will:
1	Define key terms and principles linked to anaesthesia.
2	Discuss the importance of minimising stress prior to anaesthesia in reducing the likelihood of complications due to anaesthesia.
3	Describe and demonstrate the correct set-up, operation and maintenance of anaesthetic equipment appropriate to the species concerned.

TITLE	RECOGNITION OF PAIN, SUFFERING AND DISTRESS – SPECIES SPECIFIC		
OFQUAL NO:	J/650/7337	LEVEL	5
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit prepares individuals to be able to identify normal condition and behaviour of experimental animals and enable them to differentiate between a normal animal and one which is showing signs of pain, suffering or distress which could be a result of factors including environment, husbandry or the effect of experimental protocols. It will also provide information regarding severity classifications, cumulative severity and the use of humane endpoints.	

	Learning Outcomes The learner will:
1	Describe methods for assessing and recording the welfare of the animals in their care.
2	Discuss humane endpoints and their use.
3	Describe the use of anaesthesia or analgesia to reduce animal pain, suffering, distress or lasting harm

TITLE	MANAGING AND DEVELOPING TEAMS		
OFQUAL NO:	L/650/7339	LEVEL	6
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>The unit's purpose is to provide the learner with the opportunity to investigate processes and models involved in developing and managing effective teams.</p> <p>The unit's aim is to develop behaviours and skills that enable the learner to effectively manage and develop their team.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	<p>Determine the role of the team and how it will meet the needs of relevant stakeholders.</p> <p>Understand the power of both team and organisational culture in managing and developing their team.</p>
2	<p>Determine the development needs of the team, recognising what is needed to close the gap between current and optimum performance.</p> <p>Locate appropriate resources to support and develop the team.</p>
3	<p>Discuss relevant leadership and management techniques.</p> <p>Appreciate how to develop and motivate the team to maintain team effectiveness.</p> <p>Understand the importance of delegation in supporting team development and effectiveness.</p>
4	<p>Understand how to use effective communication techniques to maintain team effectiveness.</p>
5	<p>Understand the varied factors affecting both individual and team performance.</p> <p>Understand the most effective process to follow in setting clear and achievable goals for the team.</p>

TITLE	STRATEGIC THINKING		
OFQUAL NO:	T/650/7340	LEVEL	6
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>The unit's aim is to develop an understanding of strategic thinking and the range of approaches available to support that.</p> <p>The unit's purpose is how to develop behaviours and skills that enable the learner to understand, influence and drive strategy within their organisation.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Critically evaluate the current organisational strategy.
2	Discuss the use of models to evaluate the strategic position of the organisations represented by the learners.
3	Critically appraise methods of establishing, communicating and actioning the strategic plan for the organisation.

TITLE	INFLUENCING PEOPLE WITH INTEGRITY		
OFQUAL NO:	Y/650/7341	LEVEL	6
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The unit will develop skills in influencing and negotiating effectively and understanding of the importance of integrity, so the learner will be better placed to assert influence to achieve positive outcomes in the workplace and to access resources and support for their department.	

	Learning Outcomes The learner will:
1	Discuss what constitutes integrity and why it is important to underpin influence. Identify a variety of situations in the workplace where they might need to exert a positive influence.
2	Investigate the characteristics of successful negotiators.
3	Investigate potential problems and describe strategies.
4	Discuss strategies for exerting influence in other workplace situations. Identify how the learning on effective negotiation can be applied to exerting influence in other workplace situations.

TITLE	PROJECT PLANNING – PRINCIPLES AND PRACTICES FOR SUCCESS		
OFQUAL NO:	A/650/7342	LEVEL	6
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT The project topic can be either scientific, welfare, design or business/organisational. Demonstrate research and cite appropriate references to support your points.			
Unit purpose and aim(s)		The aim of the unit is to develop the skills and knowledge of the learner so they can apply the key principles of scoping, planning, implementing and evaluation of a project in the LAS setting achieving the project objectives with the expected performance for time, cost, quality, scope, benefit and risk.	

	Learning Outcomes The learner will:
1	Develop an effective project proposal.
2	Demonstrate an understanding of the project life cycle by applying scoping, planning and implementation techniques.
3	Demonstrate an understanding of the different types of stakeholders and the ways key stakeholders influence project delivery. Develop communication with stakeholders.
4	Demonstrate accountability and risk management.

TITLE	EXPERIMENTAL DESIGN FOR IN VIVO RESEARCH		
OFQUAL NO:	D/650/7343	LEVEL	6
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>This unit provides a relevant level of understanding of the national and international legal and regulatory framework within which projects are constructed and managed, and of their legal responsibilities.</p> <p>The learner must be able to identify, understand and respond appropriately to the ethical and welfare issues raised by the use of animals in scientific procedures generally and specifically within their own programme of work.</p> <p>The learner should be able to develop, direct and control a programme of work in order to achieve its stated objectives, while ensuring compliance with the terms and conditions of any regulation governing the project.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Describe in detail the main components of the national legislation regulating the scientific use of animals.
2	Describe the principles of a good scientific strategy that are necessary to achieve robust results.
3	Justify on both scientific and ethical grounds, the decision to use living animals.
4	Implement the Three Rs

TITLE	PAIN AND DISTRESS IN LABORATORY ANIMALS		
OFQUAL NO:	F/650/7344	LEVEL	6
CREDIT VALUE	30	Total learning time	300 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>Understanding, preventing and alleviating pain and distress is a key part of the responsibilities of many animal care staff.</p> <p>This may involve directly evaluating the welfare state of animals and implementing refinements to their care, or participating in the ethical review process and contributing to the harm: benefit analysis of research projects.</p> <p>This unit provides an overview of pain and distress in laboratory animals, gives an introduction to pain and nociception, and current concepts of animal welfare. It provides detailed information on evaluating and managing pain in rodents, and an overview of pain in larger species and in non-mammalian species. The evaluation of severity of research procedures is discussed, together with the issues surrounding cumulative severity and retrospective assessment of procedures.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Understand current concepts of pain and distress and animal welfare.
2	Recognise normal or desirable behaviour and appearance of animals, and abnormal behaviour and signs of discomfort, pain, suffering, or distress.
3	Describe what a humane endpoint is and discuss their use.
4	Describe the severity classifications.
5	Discuss the use of refinement to minimise welfare concerns.
6	Discuss effective welfare assessment strategies.

TITLE	THESIS/PROJECT		
OFQUAL NO:	H/650/7345	LEVEL	6
CREDIT VALUE	30	Total learning time	300 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>The aim of this unit is to allow the learner to demonstrate the broad range of skills and knowledge they have in the field of Animal Technology.</p> <p>It would be suitable for those interested in the IAT Fellowship.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	Demonstrate a thorough understanding of the project life cycle.
2	Work effectively within an organisation to manage and evaluate a project.
3	Produce a final report to recognised industry standards which also adheres to good academic practice.
4	Engage fully in experiential learning through the project experience and use this proactively to enhance continuous professional development.

TITLE	MANAGING AND DRIVING INDIVIDUAL PERFORMANCE		
OFQUAL NO:	J/650/7346	LEVEL	6
CREDIT VALUE	15	Total learning time	150 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT This unit should only be completed after the learner has successfully completed Unit 27 – Managing and Developing Teams			
Unit purpose and aim(s)		This unit's purpose is to develop the learner's skills in handling difficult conversations around performance. This unit's aim is to ensure that those completing it can effectively manage and drive improvements in the performance of individual team members.	

	Learning Outcomes The learner will:
1	Understand the causes of, and approaches to handling, difficult conversations.
2	Understand how to set performance targets that are clearly understood by team members.
3	Recognise the value of feedback and choose from a range of models that ensure it is given effectively.
4	Effectively address poor performance or non-compliance issues.
5	Engage successfully with colleagues to address both existing and potential conflicts.

TITLE	GENETICALLY ALTERED LABORATORY MICE – MODELS, PHENOTYPING PRINCIPLES AND PRECLINICAL MODELS		
OFQUAL NO:	K/650/7347	LEVEL	6
CREDIT VALUE	30	Total learning time	300 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		This unit will provide the learner with an understanding of different types of genetic model, the available approaches for their phenotypic evaluation, practical and logistic considerations and the challenge to map traits of human relevance in preclinical models.	

	Learning Outcomes The learner will:
1	Show a clear understanding of the different approaches available for generating genetically modified animals.
2	Devise appropriate breeding programmes detailing the key stages.
3	Compare and contrast methods of generating genetically altered models in other species (fish, rats, poultry, livestock).
4	Design an experiment using appropriate conditional and/or inducible transgenic technologies.
5	Be able to locate specific lines carrying genetic tools (recombinases, etc) mouse strains in international repositories and identify key information including nomenclature from the descriptions given.
6	Devise strategies for quality controlling conditional/inducible experiments
7	Formulate a breeding plan, taking account of power to detect traits and determine appropriate controls for conditional experimentation.
8	Be able to consider what constitutes a preclinical model and how models may be utilised.

TITLE	ESTABLISHING A CULTURE OF CARE IN RESEARCH ANIMAL FACILITIES		
OFQUAL NO:	L/650/7348	LEVEL	6
CREDIT VALUE	10	Total learning time	100 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		The unit will provide the learner with the opportunity to consider the concept of a 'Culture of Care' and to discuss ways in which it can be developed within the animal facility.	

	Learning Outcomes The learner will:
1	Identify the different types of culture that can exist in a working environment.
2	Discuss processes to develop and promote an effective workplace Culture of Care.
3	Critically appraise influences that impact the Culture of Care in the workplace.
4	Evaluate the effectiveness of the Culture of Care.

TITLE	MANAGING CHANGE		
OFQUAL NO:	M/650/7349	LEVEL	6
CREDIT VALUE	20	Total learning time	200 hours
Details of the relationship between the unit and relevant national occupational standards or other professional standards or curricula (if appropriate)			
Location of the unit within the subject/sector classification system		Animal Technology	
ADDITIONAL INFORMATION ABOUT THE UNIT			
Unit purpose and aim(s)		<p>The purpose of this unit is to provide the learner with the opportunity to investigate the process of change management and assess the impact it has on the people within the organisation.</p> <p>This unit aims to provide the learner with the tools and techniques to be an agent for change within their organisation.</p>	

	<p>Learning Outcomes</p> <p>The learner will:</p>
1	<p>Understand what is meant by change management.</p> <p>Understand established strategies for introducing change into the workplace.</p>
2	<p>Gain the knowledge needed to effectively plan and prepare for change management.</p>
3	<p>Assess the impact on the workforce of change management.</p>
4	<p>Recognise the need for continual monitoring and review to sustain change.</p>



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