LAS-Learning

Trainees Instructions

EU Module 3.1 - Basic and appropriate biology - Species specific: Fowls

Development of interactive e-learning modules on specific areas of the Education & Training framework facilitating implementation of DIR 2010/63/EU

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Suported by:

Partners:

Table of contents

1. Module Description

1.1 Overview

This module - Basic and appropriate biology - Species specific: Chickens - will introduce you to the basic anatomy, physiology, dietary needs, and optimal housing in a laboratory environment for chickens, as well as best husbandry practices to ensure good health and welfare. Additionally, the module will address the impact of various experimental procedures on their welfare, discuss the different breeds, and outline best practices for record-keeping.

If you are visiting the site independently, you should consult the EC Training and Education framework guidance document, which provides an overview of training requirements for individuals with different responsibilities under their relevant national legislation. Additional education and training may be necessary to meet national or institutional requirements.

This document offers suggestions for supporting your training. Each module aligns with the learning outcomes specified by the EU Education & Training framework for laboratory animal science. This module was developed by Dorothy McKeegan and Nuno Henrique Franco, professionals known for their contributions to animal welfare, animal science, and related fields with extensive experience researching, publishing, and training. In addition, an international Reflection Group panel has further refined the content, while Nuno H. Franco managed overall coordination.

Your collaboration and feedback are greatly appreciated, as the module is currently in the testing phase.

2. Prerequisites and Requirements

2.1 Prerequisites

To ensure that learners can fully engage with the content and achieve the intended learning outcomes, they should ideally have some foundational knowledge and training before taking this module, ideally a degree in the biological, agricultural, or veterinary sciences. Regarding laboratory animal science, before taking Module 3.1, trainees should ideally complete:

- **Module EU-1**: National Legislation and Ethical Frameworks
- **Module EU-2**: Ethics, Animal Welfare, and the Three Rs (level 1)
- **Module EU-4**: Basic Animal Handling and Husbandry Principles

2.2 Requirements

- Completion of lessons and understanding of learning objectives.
- Participation in knowledge checks and assessments to evaluate understanding.

3. Grading and Completion

Grading will be based on the successful completion of knowledge checks and assessments provided at the end of each module. Upon finishing all parts of the module, students will receive a certificate of completion. If proof of completion for a specific section is required, learners may be asked to take a screenshot of the screen, as each part's completion is indicated. This ensures transparency and verifiability of progress.

4. Textbooks and Reading Materials

The **"References and Further Reading"** lesson provides most references and readings. They comprise scientific articles, sections of books, websites, and videos. Clicking on any link will open a new window to download or visualise the additional material. Several links to further resources can also be found in the module contents to better guide the reader.

The additional materials provide more information on specific topics, tools, and resources.

5. Course Program

The module is organised into one chapter, with lessons and learning objectives as follows:

Chapter	Lessons	Learning Objectives
Fowls	1-10	• Describe basic anatomy, physiology, reproduction and behaviour of the relevant species. • Recognise and describe life events that have the potential to cause suffering including sourcing, transport, housing, husbandry, handling and procedures (on a basic level). • Indicate how good welfare can promote good science: e.g. explain how the failure to attend to biological and behavioural needs may affect the outcome of procedures. • Indicate how husbandry and care may influence experimental outcome and the number of animals needed, e.g., an example where the place in the room influences the outcome, hence randomisation. • Describe the dietary requirements of the relevant animal species and explain how these can be met. • Describe the importance of providing an enriched environment (appropriate to both the species and

		the science) including social housing and opportunities for exercise, resting and sleeping. • When relevant to the species, recognise that there are different strains, and that these can have different characteristics which can affect both welfare and science. • Maintain and interpret accurate, comprehensive records of animals held in the animal facility, including the wellbeing of the animals

Table 1 - Learning objectives per parts and lessons.

5.1 Progress Tracking

Once you begin working through a module, your progress is tracked, and you can break off and resume your studies at any point. Once the module is completed, the trainee can access any section to refresh their understanding of a topic.

5.2 Module Structure

The module is divided into several parts, and although they were designed to be followed sequentially, they can also be taken iteratively. Please note that a certificate of completion is only issued to learners who complete all module parts. If proof of completion for a specific part of the module is required, the trainee should provide a snapshot of the screen because the module indicates progress after each part is completed.

5.3 In-Depth Explanation Lesson by Lesson

Lesson	Title	LO	Explanation
1	Introduction		Introduction to fowls with 1 photo.
2	Basic anatomy	3.1.1	Basic anatomy description with 3 photos, 1 interactive labelled figure and 1 labelled figure. Respiratory System description with 1 figure. Digestive System description with 1 figure. Reproduction description. Sensory Biology description. Behaviour description with 1 video.
3	Adequate housing and enriched environment	3.1.5	Importance of providing an enriched environment with 1 table.

4	Dietary requirements	3.1.6	Dietary requirements of the relevant animal species with 2 photos.
5	Different strains	3.1.7	Different strains and characteristics in 1 photo.
6	Welfare impact of procedures	3.1.2	Description of life events that have the potential to cause suffering.
7	Good welfare for better science	3.1.3 3.1.4	Image and short introduction
8	Summary		Module summary
9	References and Further Reading		References for additional materials
10	Knowledge-check		Assesses progress and knowledge acquired during the module

Table 2 - Explanation lesson by lesson.

6. Target Audience

This module is intended for (bio)medical researchers, participants in laboratory animal science courses, university students, biology/medical teachers, animal welfare body members, regulators, and anyone interested in learning more about animal research ethics and the principles of Replacement, Reduction, and Refinement of animal use for scientific and educational purposes.

7. Notes

As this is a test run, we kindly request one feedback form for each tested module to ensure we gather thorough insights for every tested module. The majority of the modules are designed to complement other components of your training, and the content should be accessible even if you have relatively little experience working with laboratory animal science. Where appropriate, the introduction to the module suggests pre-reading and suggested training that should be completed before continuing with the module.

7.1 Testers' Feedback Form

We would greatly appreciate your valuable insights and detailed feedback regarding the instructions provided. Your input will help us ensure clarity, accuracy, and overall effectiveness in conveying the necessary information.

https://forms.uu.nl/universiteitutrecht/TestReview_LASLearning_instructions