

Module code: MOD010092	Version: 2 Date Amended: 11/Apr/2025
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1. Module Title
Nutritional Issues in Animal Welfare

2a. Module Leader
Sifelani Chikunya

2b. School
Writtle School of Agriculture, Animal and Environmental Sciences

2c. Faculty
Faculty of Science and Engineering

3a. Level
7

3b. Module Type
Standard (fine graded)

4a. Credits
15

4b. Study Hours
150

5. Restrictions			
Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:			

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module explores the critical role of diet and feeding practices in both the development and the management of nutrition-related disorders in farm animals, companion animals and captive wild animals in zoos. You'll engage in in-depth analysis of research-based case-studies and/or live briefs will be used to examine common nutritional problems such as metabolic bone diseases in reptiles, diet-induced anaemias, iron-storage overload diseases (e.g., hemosiderosis) in captive wild animals, type-2 diabetes in captive primates, chronic wasting syndrome in captive giraffes and the effects of feed toxins/anti-nutritional factors on animal health and welfare.

You'll also explore areas such as the range of feeding behaviours and nutritional adaptations found in animals, including the challenges faced by nutritionists when feeding wild animals held in captive environments. You will learn the scientific procedures and tools used by animal welfare inspectors for conducting nutritional status assessments and investigations in animals. You will also look at nutritional similarities and differences across a variety of animal species including the implications of using the well-studied nutritional needs of domestic animals, and their use as the basis or models for diet design and feeding practice for wild animals in captivity whose nutritional needs are not so well researched.

6b. Outline Content

COMPARATIVE NUTRITIONAL ADAPTATIONS IN ANIMALS: Analysis of differences and/or similarities in gastrointestinal systems and diversity in nutritional strategies and their consequences for nutrient utilization.

NUTRITIONAL INVESTIGATIONS AND ASSESSMENT OF NUTRITIONAL STATUS: Critically evaluation of the range and validity of measures or indices used to assess the nutritional status. Appraisal of morphometric assessments such as body condition scores, body mass indices, subcutaneous fat and muscle and internal fat depots. The value of biochemical analysis of metabolic profiles of body fluids such as blood and tissues.

CHALLENGES OF FEEDING WILD ANIMALS IN CAPTIVE ENVIRONMENTS: Evaluation of challenges of feeding wild animals in captive environments such as zoos, with emphasis on the adequacy of domestic animals (farm and companion animals) as nutrition models for wild animal diet design and feeding practice.

NUTRITIONAL DISORDERS AND ANIMAL WELFARE: Range of anti-nutritional factors and toxins found in animal feed ingredients and toxicological vulnerabilities found among animals. Influence of nutrition on welfare. In-depth studies of common nutrition-related metabolic disorders such as metabolic bone diseases in reptiles, acidosis, ketosis, diet-induced anaemias, iron-storage overload diseases (e.g., hemosiderosis) in captive wild animals, type-2 diabetes in captive primates, chronic wasting syndrome in captive giraffes. The biochemical causes, consequences and management of nutrient deficiencies and toxicities.

6c. Key Texts/Literature

The reading list to support this module is available at: <https://readinglists.aru.ac.uk/>

6d. Specialist Learning Resources

None

7. Learning Outcomes (threshold standards)		
No.	Type	On successful completion of this module the student will be expected to be able to:
1	Knowledge and Understanding	Appraise and assimilate the role of diet in the development of metabolic disorders and nutrient toxicities in animals including implications on animal behaviour, performance, health and welfare.
2	Knowledge and Understanding	Critically appraise the physiological basis of nutrient requirements and procedures for assessment of nutritional status.
3	Intellectual, practical, affective and transferrable skills	Analyse and communicate the interplay between feeding practices, nutrition-related problems and strategies to mitigate resultant welfare problems in farm, companion and captive wild animals.

8a. Module Occurrence to which this MDF Refers				
Year	Occurrence	Period	Location	Mode of Delivery
2026/7	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	Hours	Learning Outcomes	Details of Duration, frequency and other comments
Lectures	30	1-3	Formal Scheduled Teaching - A range of activities, including formal lectures, seminars, journal clubs etc.
Other teacher managed learning	6	1-3	Summative presentations - Individual student-led presentations.
Student managed learning	114	1-3	Set reading, background reading, study for formative workshops and assignments (presentation and report). Reading materials and learning activities will be supplied in class and on the Moodle platform.
TOTAL:	150		

9. Assessment for the above Module Occurrence

The assessment for some modules includes a presentation (see below for details on how this particular module is assessed). We recognise that presenting, especially to a large group, can cause significant anxiety or distress for some students. If this may affect you, please contact your Module Leader or the Disability and Neurodiversity Service as early as possible. We will work with you to consider appropriate reasonable adjustments. Depending on your individual needs, these might include, for example, presenting to a smaller group or presenting only to a member of academic staff.

Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Practical	1-3	35 (%)	Fine Grade	40 (%)

Multimedia presentation (e.g., PowerPoint) with text, tables, diagrams and images etc (maybe 12 minutes, depending on cohort size) and followed by responses to questions (5 minutes).

Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
011	Coursework	1-3	65 (%)	Fine Grade	40 (%)

Report (2500 Words) - Individual, in-depth, research-based evaluation of either a specific nutrition problem and its implications on animal welfare, critique of the practice of using of domestic animals as models for captive wild animal feeding and diet design in zoos.

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:

- (a) achieve the qualifying mark for each element of fine graded assessment as specified above**
- (b) pass any pass/fail elements**

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]