

Module code: MOD011004	Version: 1 Date Amended: 08/Oct/2025
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1. Module Title
Developments in Veterinary Science

2a. Module Leader
Romain Paillot

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

2c. Faculty
Faculty of Science and Engineering

3a. Level
6

3b. Module Type
Standard (fine graded)

4a. Credits
30

4b. Study Hours
300

5. Restrictions			
Type	Module Code	Module Name	Condition
Pre-requisite:	MOD010982	Exercise Physiology and Nutrition	Compulsory
Pre-requisite:	MOD010977	Veterinary Interventions and Diagnostics	Compulsory
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	BSc Equine Science; BSc Equine Business management		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description
This module focuses on advanced concepts related to equine health and performance management, and explores the medical, epidemiological and technological aspects of horse care. Within this module, you'll explore the development of foals from birth through early training stages. You'll study their growth and physiological changes, alongside their behavioural development, nutrition, health care, handling and training techniques. The module provides an in-depth examination of equine sports medicine, which includes understanding the physical demands placed on horses during various athletic activities and the strategies to optimise their performance and recovery. You'll discuss reproductive physiology and breeding technologies, gaining insights into the latest advancements in equine reproduction and the methods used to enhance breeding outcomes. This module is designed to equip you with the knowledge to understand and manage the diagnosis, prevention, and control of diseases affecting equine populations. You'll learn about the epidemiological patterns of equine diseases, the latest diagnostic tools, and the best practices for disease prevention and management. By the end of this module, you'll have a comprehensive understanding of the multifaceted aspects of equine health and performance management, preparing you to apply this knowledge in real-world scenarios.
6b. Outline Content

Conception

- Biotechnology and its role in equine science
- Genetic disorders in horses (e.g., HYPP, SCID)s (more in-depth understanding of diseases covered in Reproduction and Genetics)
- Genetic manipulation in horses (selective breeding, cloning, gene editing)
- Advanced breeding management and seasonality in horses
- Advanced reproductive health (reproductive disorders and treatments, immunology, vaccination)
- Advances in pregnancy and foaling management

Foal Growth and Development

- Neonatal period: Birth to 1 month (initial adaptations, imprinting)
- Weanling phase: 1-6 months (physical growth, behaviour changes)
- Yearling phase: 6-12 months (skeletal and muscular development)
- Physiological changes during growth (skeletal maturation, muscle development, immune system)
- Nutritional requirements for growing foals (energy, protein, minerals)
- Common disorders (Developmental Orthopedic Disease, gastric ulcers, pneumonia, septic arthritis etc) and health care
- Vaccination schedules and parasite control programs
- Biomechanical longitudinal development

Training to Performance

- Progressive conditioning: Fitness development for young horses
- Discipline-specific early training (racehorses, sport horses, pleasure horses)
- Assessing a horse's readiness for advanced training
- Strategies for career management and injury prevention
- Biomechanics of gaits and jumping
- Extrinsic (saddle, rider, surface, shoeing and trimming) and intrinsic (breed and conformation) factors affecting biomechanics, performance and injury

Equine Sports Medicine

- Equine athlete biomechanics and gait analysis
- Common musculoskeletal injuries (tendons, ligaments, bones): Diagnosis and treatment
- Injury prevention and rehabilitation protocols
- Drugs and doping regulations in equine sports
- Performance and Poor performance assessment

Epidemiology applied to equine from conception to competition

- Introduction to epidemiology and its role in equine health
- Infectious diseases of horses (e.g., equine influenza, strangles, equine herpesvirus)
- Biosecurity, diagnosis and disease control protocols · Vaccination strategies and disease prevention
- Emerging and re-emerging infectious equines diseases
- Future strategies for disease diagnosis, prevention and control

6c. Key Texts/Literature

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

6d. Specialist Learning Resources

All the equipment and computer software required for this module is available on the ARU Writtle campus.

Equine facilities, Laboratory and lab equipment (e.g. microscopy), biomechanic equipment.

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	Critically evaluate common sports injuries in horses and develop appropriate management, prevention and rehabilitation plans.
2	Intellectual, practical, affective and transferrable skills	Understand epidemiological principles related to equine diseases, including biosecurity and disease transmission.
3	Knowledge and Understanding	Critically assess reproductive techniques and biotechnology applications in equine breeding.
4	Intellectual, practical, affective and transferrable skills	Analyse the anatomy, biomechanics and physiology relevant to equine sports performance
5	Knowledge and Understanding	Explain the stages of physical, physiological, and behavioural development in foals from birth to early training

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	48	1,5	16 x 3 hours a week of lectures
Other teacher managed learning	18	2,3,4	6 x 3 hours practicals or visits
Student managed learning	234	1,5	Self-Directed Learning, VLE tasks, pre and post-session activities
TOTAL:	300		

9. Assessment for the above Module Occurrence					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Coursework	1,4	35 (%)	Fine Grade	30 (%)
Coursework: 2000 words, blog article					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
011	Coursework	3,5,	35 (%)	Fine Grade	30 (%)
Coursework: 2000 words owner booklet for recommendations on nutrition and health management for foals					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
012	Practical	2	30 (%)	Fine Grade	30 (%)
Presentation: Individual presentation (10min including a poster) critically assessing an existing equine infectious diseases outbreak					

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]