Module Definition Form (MDF)

Module code: MOD010985	**Version:** 1 **Date Amended:** 07/Mar/2025

1. Module Title
Equine Reproduction and Genetics

2a. Module Leader
Caroline Farr

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

2c. Faculty
Faculty of Science and Engineering

3a. Level
5

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:	BSc Equine Science		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module offers a comprehensive examination of equine reproductive physiology and the integral role of genetics in contemporary breeding practices. You'll explore the biological mechanisms underpinning equine reproduction, including endocrine regulation, reproductive cycles, gametogenesis and assisted reproductive technologies (ARTs) such as artificial insemination, embryo transfer, and cryopreservation.

A significant focus will be placed on the application of genetic principles, such as inheritance patterns, genetic variation, and molecular genetics to inform and optimise breeding decisions. You will evaluate how genetic tools, including estimated breeding values (EBVs), and genomic testing contribute to the selection of breeding stock and the management of heritable traits and disorders.

You'll assess reproductive management strategies and their implications for breeding efficiency, foal viability, and overall equine welfare. You'll analyse real-world case studies and current research to contextualise the use of reproductive and genetic technologies within ethical, legal and welfare frameworks.

Through interactive seminars, practical sessions and collaborative projects, you'll develop the communication and analytical skills necessary to engage effectively with industry professionals, including veterinarians, breeders and stud managers. Emphasis will be placed on evidence-based decision-making and the ability to articulate complex genetic and reproductive concepts in a professional context.

6b. Outline Content

- Genetic Principles: From basic genetic principles, including Mendelian inheritance, genotype vs. phenotype, and the role of chromosomes in heredity to the use of genetic testing in equine breeding programs, including the identification of hereditary conditions and performance traits.
- Reproductive Challenges: From monitoring reproductive efficiency and breeding values, considerations surrounding mare and stallion behaviour and welfare to management of reproductive diseases, placental development and EEL.
- Reproductive and Neonatal Practices: Covering common practices and technologies such as AI and ET as well as the collection process. Neonatal management and foetal growth including the development of critical systems will be touched upon.

6c. Key Texts/Literature

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

6d. Specialist Learning Resources

Equine Facilities, Reproduction facilities, stallions, semen collection and processing equipment and laboratory space.

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	Apply genetic principles as part of reproductive decision making
2	Knowledge and Understanding	Analyse common reproductive and management practices in equine breeding, such as reproductive technology, neonatal and DOD management or reproductive efficiency.
3	Intellectual, practical, affective and transferrable skills	Demonstrate effective communication skills when discussing reproductive and genetic topics with equine professionals, such as veterinarians, breeders, and owners.

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	24	1-3	Lectures
Other teacher managed learning	12	1-3	Practicals, seminars/workshops, tutorials/critiques, student presentations
Student managed learning	114	1-3	Directed reading. Canvas activities. Preparation for workshops, seminars and summative assessments. Supporting material to direct further reading and prepare for assessments.
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Practical	1,3	50 (%)	Fine Grade	30 (%)
Case study presentation					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
011	Coursework	2	50 (%)	Fine Grade	30 (%)
1500 word analysis of reproductive management or practice for a chosen topic					

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]