

VM4115: EQUINE MEDICINE AND SURGERY

Effective Term

Semester A 2024/25

Part I Course Overview

Course Title

Equine Medicine and Surgery

Subject Code

VM - Jockey Club College of Veterinary Medicine and Life Sciences

Course Number

4115

Academic Unit

Veterinary Clinical Sciences (VCS)

College/School

Jockey Club College of Veterinary Medicine and Life Sciences (VM)

Course Duration

One Semester

Credit Units

6

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Completion of Year 4 courses with C grade or above

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course covers population medicine, internal medicine, basic surgery & lameness, anaesthesiology, radiology, cardiology, ophthalmology, and dermatology in the horse. The number of lecture hours is proportional to the frequency

of presentation of case type in a mixed practice setting where there is an equine caseload. The course focuses on the diagnosis and management of common equine diseases seen in first opinion practice, with a focus on achieving day one competencies. Students will learn the basics of referral-level practice and when it is appropriate or necessary to refer a case to a specialist clinician for further investigation and/or treatment. Practical classes will make use of dry labs, mannequins, models, and live animals as appropriate in order to ensure students gain practical skills. Live animal classes will emphasize the importance of safe handling of horses during veterinary work.

AI integration will enhance learning by providing AI-generated clinical case scenarios for students to diagnose and treat, simulating real-life consultations, etc. These exercises will develop critical thinking and problem-solving abilities, preparing students for modern veterinary practice.

The course will incorporate team-based learning (TBL) enhanced by technology, promoting collaborative problem-solving. Students will work in groups to solve clinical cases, fostering teamwork and practical skills. Technology-enhanced learning will include interactive videos, ensuring diverse and interactive learning experiences.

This course provides a sound foundation for clinical rotations in later parts of the program. A variety of pedagogical techniques are used, including lectures, live animals, cadaver and mannequin laboratories, wet lab exercises, dry lab exercises and discussion, demonstrations, large group case discussions, and auto-tutorials.

Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1 Take and interpret an appropriate patient history and integrate this with physical examination findings in order to formulate ranked lists of differential diagnoses and best-practice strategies for the diagnosis and treatment of disease in equines.			x	x
2 Describe and design preventative and population health plans including breeding management, vaccination and antiparasitic protocols appropriate to the population and geographic location.		x		x
3 Select and interpret commonly used diagnostic techniques used in equine practice including haematology, biochemistry, cytology, radiology, ultrasound, histopathology. Select where advanced diagnostic tests may be indicated i.e. electrocardiography, echocardiography, nuclear scintigraphy, MRI, CT and dynamic endoscopy.			x	x
4 Demonstrate how to safely and appropriately use portable radiographic equipment (limited to the distal limb and head) and interpret common radiographic findings in order to diagnose disease. Explain when radiography is appropriate for use in other regions of the body.			x	x
5 Use an ultrasound scanner and interpret ultrasonographic images of the distal limb (palmar metacarpal region). Explain when ultrasonography is an appropriate treatment modality for other regions of the body.			x	x

6	Develop treatment and management protocols for common equine diseases and conditions, including selecting and justifying appropriate drugs for the management of common diseases and conditions.		x	x	
7	Describe and perform basic equine practical techniques such as basic surgery, wound management, basic dentistry and diagnostic analgesia. Identify potential complications and plan how to avoid these.			x	x
8	Develop appropriate management strategies for equine emergencies such as colic, ocular emergencies, wounds, and fractures and discuss treatment options including referral and when appropriate, euthanasia.		x	x	

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will receive foundational knowledge through interactive components such as real-time quizzes and student discussions to enhance engagement and ensure understanding.	1, 2, 3, 4, 5, 6, 7, 8	43 hours in total
2	Tutorials	Students will be involved in group discussions and problem-solving of clinical cases. These sessions will focus on ethical decision-making, empathy, financial constraints, legislation, collegiality, and case referral, helping students apply lecture knowledge in practical scenarios.	1, 2, 3, 4, 5, 6, 7, 8	7 hours in total

3	Self-learning*	Students will receive structured study plans with specific learning outcomes. Students will use online materials and complete preparatory assignments before practical sessions, fostering a deeper understanding and independent study skills.	1, 2, 3, 4, 5, 6, 7, 8	11 hours in total
4	Practical classes*	Students will focus on developing hands-on skills through simulations, use of mannequins, and live animals. These sessions are designed to ensure students gain proficiency in day-one competencies. Self-assessment and peer feedback will be integral components to enhance learning outcomes.	1, 2, 3, 4, 5, 6, 7, 8	17 hours in total

Additional Information for LTAs

Important note relating to self-learning and practical sessions:

*Course structure entails both self-learning and practical sessions, BOTH of which are COMPULSORY. Each practical lesson is preceded by a self-learning session, requiring students to thoroughly study provided materials (online articulate course) and to complete a short assessment (this will be released in Canvas 48 hours prior to the intended practical session), which must be completed prior to the practical lesson.

In the practical lesson, demonstrations will not be conducted, as it is an opportunity for students to apply what they have learned in their self-learning sessions. Academy staff will be present to clarify queries.

Students can be absent from no more than one practical session or one self-learning online assessment per semester. Additional absence(s) from these session(s) constitute a course failure. Permission to make up missed practicals and self-learning assessments may be granted for excused absences only, and only where feasible (i.e., may not be possible for live animal classes). Unexcused absences do not entitle students to any make-up or alternative arrangements.

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Quizzes	1, 2, 3, 4, 5, 6, 7, 8	20	
2	Written Examination (2 hrs)	1, 2, 3, 4, 5, 6, 7, 8		40%
3	OSCE assessment	1, 2, 3, 6, 7, 8	10	
4	AI-driven exercises	1, 2, 3, 4, 5, 6, 7, 8	20	
5	Team-based learning	1, 2, 3, 4, 5, 6, 7, 8	10	

Continuous Assessment (%)

60

Examination (%)

40

Examination Duration (Hours)

2

Additional Information for ATs

1. Students must obtain at least 50% in the course overall, as well as obtain 50% in each of the assessments, as well as, pass the OSCE to pass the course as a whole.
2. Examinations and the OSCE will be held at scheduled examination times.

Assessment Rubrics (AR)

Assessment Task

Quizzes & Examinations & Team-based learning

Criterion

Student can integrate the clinical sciences of medicine, surgery, anaesthesiology, radiology, and theriogenology with systems pathology and relevant aspects of applied pharmacology to establish a cognitive framework applicable to particular disease, condition and/or emergency situation.

Discuss and demonstrate correct use of diagnostic equipment and methodologies in order to provide optimal and realistic work up options.

Describe the mechanisms of action, dosage and clinical use of common pharmacological agents used in the different disciplines, in order to select and administer suitable agents to ensure patient welfare and safety and discuss options to deal with side effects that may arise.

Describe a case management plan that considers clinical, ethical and professional factors in addition consideration of owner financial constraints

Excellent (A+, A, A-)

Excellent integration and application of knowledge. Comprehensively discusses topic while considering clinical relevance. Evaluates solutions.

Good (B+, B, B-)

Good integration and application of knowledge. Discusses topic while considering clinical relevance. Explains solutions.

Fair (C+, C, C-)

Some integration and application of knowledge. Explains key concepts and recognizes clinical relevance. Suggests appropriate solutions.

Failure (F)

Inadequate knowledge with limited or no ability to integrate or apply to a clinical scenario. Suggests inappropriate solutions.

Assessment Task

OSCE assessment

Criterion

Demonstrates safety and competency in practical skills. Can ask and answer questions for a consultation in a professional manner.

Excellent (A+, A, A-)

Excellent execution of task with few or no errors. No safety concerns.
Excellent communication skills.

Good (B+, B, B-)

Good execution of task, with some minor permissible errors. No safety concerns.
Good communication skills.

Fair (C+, C, C-)

Adequate execution of task, but with more significant errors. No safety concerns.
Adequate communication skills but makes some errors.

Failure (F)

Fails to demonstrate appropriate level of competency in practical procedures or completes procedures in an unsafe manner.
Poor communication skills or unprofessional.

Assessment Task

AI-Driven Exercises

Criterion

Students can integrate AI tools to enhance the clinical sciences of medicine, surgery, anesthesiology, radiology, and theriogenology with systems pathology and relevant aspects of applied pharmacology to establish a cognitive framework applicable to particular diseases, conditions, and/or emergency situations.

Excellent (A+, A, A-)

Demonstrates outstanding critical thinking and problem-solving skills with comprehensive and detailed responses. Shows excellent understanding and application of knowledge. Interactions and documentation are thorough, logical, and well-organized, with faultless use of terminology, spelling, and grammar.

Good (B+, B, B-)

Demonstrates strong critical thinking and problem-solving skills with detailed and logical responses. Shows good understanding and application of knowledge. Interactions and documentation are clear and well-organized, with very good use of terminology, spelling, and grammar.

Fair (C+, C, C-)

Demonstrates adequate critical thinking and problem-solving skills with reasonable and logical responses. Shows adequate understanding and application of knowledge. Interactions and documentation are satisfactory, but may have minor organizational issues and errors in terminology, spelling, and grammar.

Failure (F)

Demonstrates inadequate critical thinking and problem-solving skills with unclear or illogical responses. Shows poor understanding and application of knowledge. Interactions and documentation are poorly organized, with frequent errors in terminology, spelling, and grammar.

Additional Information for AR

Mark Range

The following is the mark range for each letter grade that must be used for assessment of any examinations or coursework of BVM courses (VM- and GE-coded) offered by PH and VCS.

A+: ≥92% A: ≥87-91.99% A-: ≥82-86.99% B+: ≥75-81.99% B: ≥68-74.99% B-: ≥61-67.99% C+: ≥54-60.99% C: ≥50-53.99%,
F:<50%

Part III Other Information

Keyword Syllabus

Equine
Horse
Donkey
Animal health

Disease
Pathology
Veterinary pharmacology
Population medicine
Internal medicine
Dermatology
Cardiology
Respiratory
Gastrointestinal
Orthopaedic
Dentistry
Ophthalmology
Surgery
Anaesthesiology
Radiology
Theriogenology
Therapy

Reading List

Compulsory Readings

Title	
1	Nil

Additional Readings

Title	
1	Equine Veterinary Education - articles
2	AAEP proceedings – HOW TO sessions