

1. Module Facts and Details

Module Title:	Built to Move: How Animal Skeletons and Soft Tissues Work Together
Module Synopsis:	This module will introduce veterinary anatomical terms and describe the functional anatomy of the canine vertebral column, forelimb and hindlimb. This module will also introduce comparative anatomy, including specific musculoskeletal adaptations of the horse and other common domestic species. In addition, this module will highlight how functional anatomy can aid the diagnosis of clinical cases in veterinary medicine.
Credits:	5
Level:	Level 4
Module Availability – Campus/Semester:	Liverpool campus / Summer (June-September)
Faculty:	Health and Life Sciences
Module Coordinator:	Module Leader: James Anderson Staff who will deliver sessions on the module: James Anderson, Rosie MacDiarmid, Zeeshan Durrani
Module Overview:	Attendance Recorded: Yes The summer school programme consists of standardised module formats whereby students attend 6 x 2 hr sessions over a 3-week period.
Notes:	This module is due to commence in June 2026. There are no resource implications for consideration at final approval.

In Programmes:	Module Status:
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2. Aims and Content

<p>Module Aims:</p>	<ul style="list-style-type: none"> • To provide students with an understanding of the functional anatomy of the canine musculoskeletal system for locomotion. • To foster critical thinking and practical skills through activities that involve analysing skeletal structures, comparing different animal skeletons. • To provide problem-based learning skills in understanding the effect of nerve damage on the mobility of animals. • To develop skills in collaborative learning and in preparing and delivering a group presentation.
<p>Outline Syllabus:</p>	<p>Session 1: Anatomical terms, structure & function of the musculoskeletal system (2 hrs)</p> <p>Content:</p> <ul style="list-style-type: none"> ○ Introduction to anatomical terms ○ Types of bone and joint and their function ○ Tissue level structure of bone and muscle ○ The role of tendons and ligaments ○ Axial skeleton <p>Session 2: Anatomy of the forelimb of the dog (2 hrs)</p> <p>Content:</p> <ul style="list-style-type: none"> ○ The bones of the forelimb ○ The major joints and muscle groups of the forelimb ○ The major nerves of the forelimb <p>Session 3: Anatomy of the Hindlimb of the dog (2 hrs)</p> <p>Content:</p>



- The bones of the hindlimb
- The major joints and muscle groups of the hindlimb
- The major nerves of the hindlimb

Session 4: Bones practical (2 hrs)

Content:

- Hands-on practical experience of canine forelimb, hindlimb and vertebral bones, identifying how these articulate and relate to the whole skeleton.
- Hands-on experience of comparative anatomy, comparing bones and skeletons from a range of common domesticated species.
- Digital 3D Model Competition: Group work opportunity to take multiple photographs of selected bone specimens. During the week staff at the university digital morphology laboratory will then convert these into digital 3D models, with the model regarded as the best being added to our digital anatomy museum collection.

Session 5: Functional anatomy of the hoof and horse gaits (2 hrs)

• Content:

- The anatomical structure and composition of the equine hoof
- The weight bearing mechanism of the hoof
- The normal gaits of the horse

Session 6: Peripheral nerve injuries (2 hrs)

• Content:

	<ul style="list-style-type: none"> ○ In the final session, students will relate functional anatomy to clinical cases, discussing the clinical signs associated with nerve injuries encountered in clinical veterinary practice.
Reading List:	<p>Guide to the Dissection of the Dog; Howard E Evans and Alexander de Lahunta (8th Ed)</p> <p>Veterinary Anatomy of Domestic Animals; Textbook and Colour Atlas by Horst Erich König and Hans-Georg Liebich (6th or 7th ed)</p>

3. Module Outcomes (learning outcomes, skills and other attributes)

Ref No.	Learning Outcome / Skill:	Category:
LO1	Students will be able to identify and describe major bones, muscles and nerves of the canine forelimb, hindlimb and vertebral column.	Learning Outcomes
LO3	Students will be able to identify and describe differences in the limb bones of domestic animals.	Learning Outcomes
LO3	Students will be able to discuss the clinical signs seen in animals with peripheral nerve damage.	Learning Outcomes
S1	<i>Teamwork</i>	Skills
S2	<i>Communication skills</i>	Skills
S3	<i>Critical analysis and evaluation</i>	Skills
S4		Skills
S5		Skills

4. Assessments – please choose assessment option 1, 2 or 3 (delete as appropriate)



Assessment Strategy:	<p>Assessment option <i>2x 10-question multi choice/short answer questions, one paper to be taken during week 2 and one during week 3 of each 3-week module - 50% of final grade</i> <i>and</i> <i>15-minute group presentation 50% of final mark</i></p>
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5. Learning and Teaching Methods

Summary of Learning and Teaching Methods:	<p>Teaching Method: Taught sessions, small group working, practical activity and presentations</p> <p>Description: Each week students will attend 2 x 2 hr sessions. These will consist of short lecture style sessions interspersed with practical activities and group discussion. The final session will involve group presentation of clinical syndromes</p> <p>Skill/Other attribute 1: Teamwork How this is developed: Group discussions, activities and research into cases presentation</p> <p>Skill/Other attribute 2: Communication skills How this is developed: Orally in class and practical discussions, via completion of case presentation assignment.</p> <p>Skill/Other attribute 3: Critical analysis and evaluation How this is developed: Students will be given an opportunity to compare animal skeletons and critically evaluate their differences. Students will also be given the task of evaluating how nerve injuries manifest as changes in posture and gait.</p>
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The following table must be completed for module approval, accounting for all hours associated with the credit value of the module, e.g. 15 credits there should be 150 hours of learning and teaching activity, including independent learning.

Learning and Teaching Method:	Length (Minutes):	Times per Week (if applicable):	Number of Weeks (if applicable):	Calculated Hours (if applicable):	Hours:
Self-Directed Learning	N/A	N/A	N/A	N/A	38
Seminar	N/A	N/A	N/A	N/A	12

6. Supplementary Information

If a risk assessment is required for this module for students under 18, please record a summary of the risks:	N/A
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