

1. Module Facts and Details

Module Title:	Intro to Veterinary Cardiology: The Heart of Animal Health
Marketing Module Synopsis:	This module covers the anatomy, physiology, and introductory pathology of the heart using the dog as a model species. It aims to provide students with an understanding of the structure and function of animal cardiovascular systems, the underlying principles of cardiovascular physiology, and basic principles of veterinary cardiology.
Credits:	5
Level:	Level 4
Faculty:	Health and Life Sciences
Module Coordinator:	Module Leader: Mel Chapman Staff who will deliver sessions on the module: Mel Chapman, Fay Penrose, Hannah Hodgkiss Geere, Karen Noble
Module Overview:	Attendance Recorded: Yes The summer school programme consists of standardised module formats whereby students attend 6 x 2hr sessions over a 3-week period.

2. Aims and Content

Module Aims:	<ol style="list-style-type: none"> 1. To equip students with knowledge about the structure of the heart. 2. To explore the physiological mechanisms governing heart function
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3. To teach students the basics of diagnosing and managing heart diseases in animals, including the use of diagnostic tools and therapeutic strategies such as pharmacological treatments.

Outline Syllabus:

Session 1: Introduction to the Cardiovascular System (2 hours)

Content:

The functional anatomy of the heart and great vessels

The circulatory system of the adult mammal

The main differences between blood vessel types (arteries, arterioles, capillaries, venules and veins) and how this relates to their function.

The movement of blood with reference to pressure differences in the heart and vessels.

Delivery:

Session will be interactive and use discussion and guided self-discovery. Examples of real-life cases and anecdotes from the vets and specialists teaching the topic will be given.

Session 2: Physiology of the Heart

Content:

The Cardiac Cycle (in terms of diastole, systole, and heart sounds)

Cardiac Output and Stroke Volume (Heart rate, preload, afterload and contractility)

Heart Rate Control and autonomic regulation (sympathetic and parasympathetic influence on cardiac parameters).

Delivery:



Sessions will be taught through real life cases, guided self-discovery and through small group discussion.

Session 3: Anatomy of the Heart (2 hrs practical)

Content:

Practical dissection of sheep heart (dissection Health and Safety briefing plus dissection guide will be provided prior to the use of scalpel or scissors).

Delivery:

Individual specimens with step-by-step instruction and guidance for the dissection. Time given in session for some consolidation of understanding and questioning. 1:1 discussion with lecturers and specialists on the day.

Session 4: Veterinary examination of the heart (2 hours)

Content:

Basic diagnostic tools for assessing cardiac health (auscultation, ECG, radiography, ultrasound, blood pressure)

Common cardiac diseases seen in animals (limited to hypertrophic cardiomyopathy and Mitral valve regurgitation).

Medications that alter the circulatory system (in terms of rate, contractility, fluid balance and blood pressure)

Delivery:

This session will involve the use of IT and video's to show real life cases and work through the diseases.



Session 5: Diagnostics in cardiac disease Practical session in clinical skills

Content:

Auscultation of the heart (using the simulated model or a live dog)

Positioning a dog and a cat for a chest Xray

Ultrasound of wrists (students will do this on themselves)

Taking the blood pressure of a live dog

Delivery will be practical, hands-on work. All students will be briefed on health and safety when working with animals before they are able to interact with the dogs. Dogs will be selected by temperament and ease of working.

Session 6: Group presentation of cases assigned in session 3

Students will have been allocated a real-life case and a list of cardiac medications. Their task is to work in small groups of 3, and to discuss the anatomy of the heart and to explore the altered physiology of the failing anatomy. Students will then advise on the diagnostic toolkit required to assess the disease process and select an appropriate medication from the list and explain how it will work to help the failing heart do a better job.

Reading List:

Physiology of domestic animals: Sjaastad, Sand & hove. 3rd Ed

	<p>Practical cardiology for veterinary nurses By Charlotte Pace</p> <p>Introduction to Veterinary Anatomy and Physiology Textbook, 3rd Edition by Victoria Aspinall and Melanie Capello</p>
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3. Module Outcomes (learning outcomes, skills and other attributes)

Ref No.	Learning Outcome / Skill:	Category:
LO1	Identify and discuss normal structure and function of the heart and major blood vessels of the dog.	Learning Outcomes
LO2	Students will be able to explain the cardiac cycle and the regulation of heart rate and discuss the physiology and pharmacology of heart disease.	Learning Outcomes
LO3	Students will be able to demonstrate the use of appropriate diagnostic tools in the canine cardiac patient and be able to identify normal from abnormal results.	Learning Outcomes
S1	<i>Teamwork</i>	Skills
S2	<i>Communication skills</i>	Skills
S3	<i>Problem solving</i>	Skills
S4	<i>Manual clinical skills and diagnostic imaging skills</i>	Skills
S5		Skills

4.

Assessment Strategy:	<p>Due to the need to provide a coherent experience for the students, the following three assessment types have been approved as suitable for ISS modules.</p> <p>Assessment</p>
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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
PLUS
15-minute group presentation– 50% of final mark

5. Learning and Teaching Methods -

<p>Summary of Learning and Teaching Methods:</p>	<p>Teaching Method: <i>Taught sessions, small group working, practical activities and presentations, real world examples and cases.</i></p> <p>Description: <i>Each week students will attend 2 x 2hr sessions. These will consist of short lecture style sessions interspersed with practical activities and group discussion. The final session will involve group presentation consolidating learning throughout the course.</i></p> <p>Skill/Other attribute 1:<i>Teamwork</i> <i>How this is developed: Group discussions, activities and research into group presentations activity</i></p> <p>Skill/Other attribute 2: <i>Communication skills</i> <i>How this is developed: Orally in class and practical discussions, via completion of case presentation assignment.</i></p> <p>Skill/Other attribute 4: <i>Manual clinical skills and diagnostic imaging skills</i> <i>How this is developed: During the dissection and heart examination practical classes.</i></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

<p>If a risk assessment is required for this module for students under 18, please record a summary of the risks:</p>	<p>Risk assessment required for handling of animals and to ensure no allergies</p>
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