

REF. NO.	C –VDI.5
TITLE:	VETERINARY DIAGNOSTIC IMAGING LARGE ANIMAL DIAGNOSTIC IMAGING (B)
CATEGORY AND VALUE:	C - 10 CREDITS
NOTIONAL STUDY HOURS:	100

#### STANDARDS

The aim of the module is to enable the candidate to extend and consolidate clinical knowledge and skills gained at undergraduate level, and to develop an in-depth understanding of the application of that knowledge in a practice environment in relation to Veterinary Diagnostic Imaging.

#### AREA COVERED

Specifically, this module relates to diagnostic images obtainable with higher power mobile and fixed X-ray units – the thorax and abdomen (particularly in foals), the neck, back and pelvis, and the upper limb above the carpus and tarsus – and ultrasonography of the same regions. Candidates should also be aware of the indications for scintigraphy, MRI and CT in the horse, and be able to recognise how these can confirm or rule out ambiguous findings on radiographs.

#### ASSESSMENT STRATEGY FOR THIS MODULE

*It is suggested that this module could be assessed by the following methods:*

- A **case report** of up to 2,500 words in length. This case should be selected to demonstrate the candidate's ability to use the competences that have been acquired to cope with a challenging situation, rather than necessarily using classic "textbook cases" of particular conditions. It should be presented "editor-ready" in a format appropriate to one of the main veterinary journals. Illustrations should be in a digital format and demonstrate the important features of the case.
- A **series of unseen diagnostic imaging cases** (minimum 6 sets of films) reported, blinded to history and other case details, under examination conditions. Twelve minutes should be made available for each set.
- A minimum of **two unseen sets of films** marked up to test radiographic anatomy, with a similar time allowance to that provided for the unseen cases.

#### MODULE CONTENT

At the end of this module, candidates should be able to:

- Recognise **faults due to defects in processing and film handling**, and deficiencies in film identification; recognise problems relating to density, contrast and sharpness, due to inadequate radiographic procedure; and recognise, from films, deficiencies in radiation safety procedures.

- Recognise and describe **normal radiographic anatomy** – candidates should possess a detailed knowledge of the normal radiographic anatomy of the horse and its variation with breed and age.
- Make appropriate use of **contrast media** – understand the nature of the more frequently used media and indications for their use; the procedures for performing basic contrast techniques.
- Apply the **principles of radiological interpretation** – the recognition of tissue types; formation of shadowgraphs; effects of superimposition and multiple shadows. Changes in opacity, size, shape, position and function of organs. The use of simple positional and contrast aids to elucidate radiographic problems. The applications of these basic principles to the evaluation of radiological signs in relation to clinical problems.
- Understand the principles and apply **diagnostic ultrasonography** in veterinary practice – physical principles of ultrasound; image production; display modes; artefacts; normal ultrasound appearance of the major organs (heart, lung, liver, kidney, spleen, intestine, bladder); recognition of major alterations to the normal architecture of these organs and the possible diagnostic significance of these changes.

#### COMMENTARY ON THE CONTENT

Interpretation applies to the diagnostic radiological features of the more commonly encountered clinical conditions seen in veterinary practice.

**Digestive System** Common radiographic and ultrasonographic abnormalities of the oesophagus and gastrointestinal tract. Obstructive lesions and functional disturbances. The significance of gas shadows. The use of contrast media. Differential diagnoses.

**Abdomen** (in particular in the foal) Recognition of changes in outline, position and opacity of organs. Abdominal masses and displacements caused by them. The presence of free gas or fluid. Differential diagnoses.

**Urogenital System** Common abnormalities affecting the bladder, including retrograde cystography. Differential diagnoses.

**Cardiovascular System** Common abnormalities affecting the heart and blood vessels and evidence of cardiovascular disease which may be recognised on plain films. The principles of cardiac catheterisation and angiocardiology. Differential diagnoses.

**Respiratory System** Common abnormalities affecting the trachea, thoracic wall, pleural cavity, mediastinum, diaphragm and lungs. Pulmonary patterns. Differential diagnoses.

**Musculoskeletal System** Common abnormalities affecting bones and joints of the upper limb. Fractures, dislocations, inflammatory and degenerative conditions. Congenital and developmental abnormalities, metabolic disorders. Trauma. Differential diagnoses.

**Axial Skeleton** Common abnormalities affecting the skeleton. Fractures, dislocations, congenital and developmental abnormalities. Degenerative conditions. Inflammatory and neoplastic changes. The principles and problems associated with the use of contrast media to demonstrate lesions of the spinal cord.

**Soft Tissue** Trauma. Foreign bodies. Sinuses. Calcification. The use of contrast media. Differential diagnoses.

**Special techniques** Candidates should be familiar with the general principles of contrast examinations and the performance and interpretation of the more commonly used techniques. They should understand the principles of fluoroscopy with image intensification, and Doppler ultrasonography, including colour flow, and the types of conditions in which these techniques may be usefully employed.

**Note on Choice of Cases:**

The scope of the examination is related to those conditions likely to be encountered in general veterinary practice.