

Postgraduate Certificate in Small Animal

# DIAGNOSTIC IMAGING

BSAVA  
postgraduate  
programme



NOTTINGHAM<sup>NTU</sup>  
TRENT UNIVERSITY

HEADLINE  
PARTNER

Probo  
MEDICAL



BSAVA  
BRITISH SMALL ANIMAL VETERINARY ASSOCIATION

## Find out more PGCertSADI

This programme will follow a similar structure to the existing postgraduate certificate's that we offer. The programme will be delivered in a flexible, blended fashion to facilitate part time study. Unlike our other certificates, the course is designed to deliver 75% core teaching with a 25% elective component, allowing you to personalise your study to meet your needs.

Attendance courses focus on 'hands on' practicals and workshops. The online units will contain approx. 5 hours of pre-recorded webinars PLUS a live session lasting 1.5-2 hours. Students can also choose 1 of the two currently available electives to focus on at the end of the second year.

- Enhanced Ultrasonography
- Enhanced Cardiac Imaging

There is also a requirement for all students to spend 2 days of practice observation with a specialist veterinary diagnostic imager during the elective period.

### Assessment

- Module 1 written exam
- Students need to submit 18 sets of defined images that will constitute the case diary
- 8 case reports plus two extended commentaries

## Do you have access to a dog?

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Please note that the PGCert in Small Animal Diagnostic Imaging is a practical based programme. BSAVA are unable to provide dogs for the practical courses. **Therefore, if you enrol on this course, you need to be prepared to bring a dog with you to the practical sessions.**

If you plan to sign up for this certificate, you should consider who's dog you are going to bring – your own, a friend's or colleague's – clinical patients must not be used.

You will be asked at the time of enrolment to indicate whether or not you intend to bring a dog to the course. We will need at least 15 students per cohort to agree to bring dogs, and those that do so will be offered priority booking.

If you are travelling from overseas or otherwise would find it impossible to bring a dog with you, you will be paired with another student who can.

We will have a person responsible for animal welfare at all practical courses who will be happy to look after the dogs when they are not being used for scanning. Our local hotel is dog-friendly for those who need overnight accommodation.

## Principles 1: Principles of Radiography, CT, MRI and Scintigraphy

- Radiography
  - Principles of good radiographic practice
  - Principles of conventional and digital radiography
  - Principles of radiographic interpretation
  - Image acquisition, processing and dealing with artefacts
  - Use of contrast agents
- CT
  - Principles of CT
  - Strengths and limitations of CT
  - Use of contrast agents
- MRI
  - Principles of MRI
  - Strengths and limitations of MRI
  - Use of contrast agents
- Scintigraphy
  - Basic principles of Scintigraphy
  - Indications for Scintigraphy
- Ionising radiation regulations
  - Protection of human and animal health

## Principles 2: Principles of Diagnostic Ultrasonography (P)

- Ultrasound
  - Principles of ultrasound
  - Image acquisition and dealing with artefacts
  - Using the machine and troubleshooting
  - Appearance of bone, fluid, air, soft tissue
  - Review the normal appearance of the abdomen
  - Obtain standard images of the abdominal organs (liver, spleen, gastrointestinal tract and urinary tract)

## Abdomen 1: Abdominal Radiography and CT

- Patient preparation, positioning and standard views
- Normal radiographic anatomy
- Radiographic pathology
  - Liver, spleen and pancreas
  - Gastrointestinal tract
  - Urinary tract
  - Peritoneum, retroperitoneum, lymph nodes
  - Body wall
- Contrast studies
- CT
  - Normal CT appearance
  - When to consider CT
  - Uses and limitations

## Abdomen 2: Abdominal Ultrasonography 1 (P)

- Patient preparation, positioning and standard views
- Normal anatomy and pathology associated with
  - Liver and biliary tract
  - Spleen
  - GIT
  - Pancreas

## Abdomen 3: Abdominal Ultrasonography 2

- Normal anatomy and pathology associated with
  - Urinary tract
  - Reproductive tract
  - Adrenal glands
  - Lymph nodes
  - Peritoneum and retroperitoneum
  - Abdominal wall.
- Ultrasound guided sampling techniques
  - Cystocentesis
  - Abdominocentesis
  - Fine needle aspirate
  - Tissue core biopsy

## Thorax 1: Thoracic Radiography 1

- Patient preparation, positioning and standard views
- Normal radiographic anatomy
- Radiographic pathology
  - Heart
  - Lungs
  - Great vessels

## Thorax 2: Thoracic Radiography 2 (online)

- Normal radiographic anatomy
- Radiographic pathology
  - Pleural space
  - Mediastinum
  - Thoracic wall
  - Oesophagus
- Contrast studies of the oesophagus
  - Including fluoroscopy

## Thorax 3: Thoracic CT and Ultrasonography (P)

- Patient preparation, positioning and standard ultrasonographic views
- Normal anatomy and pathology associated with
  - Lungs
  - Mediastinum
  - Pleural space
- Ultrasound guided pleurocentesis
- Ultrasound guided sampling of the lung and mediastinum
- CT
  - Normal CT appearance
  - When to consider CT
  - Uses and limitations

## Musculoskeletal 1: Orthopaedic Radiography

- Patient preparation, positioning and standard views
- Normal radiographic anatomy of bone
- Radiographic pathology associated with
  - Congenital and developmental diseases
  - Nutritional and metabolic diseases
  - Neoplasia
  - Osteomyelitis
- Radiographic pathology associated with muscles, tendons and ligaments
- Fracture classification and healing

## Musculoskeletal 2: Joint Radiography, CT and Musculoskeletal Ultrasonography

- Patient preparation, positioning and standard views
- Normal radiographic anatomy of the joints of the forelimb and hindlimb
- Radiographic pathology associated with
  - Shoulder
  - Elbow
  - Carpus
  - Hip
  - Stifle
  - Tarsus
- CT
  - When to consider CT
  - Uses and limitations
- Ultrasound of the musculoskeletal system\*
  - Uses and limitations
  - *\* a practical scanning session will be included in the H+N2 practical*

## Head and Neck 1: Radiography and CT

- Patient preparation, positioning and standard views
- Normal radiographic anatomy and radiographic pathology
- Uses and limitations of radiography and when to consider CT
- Normal CT anatomy
- Areas covered:
  - Nose and sinuses
  - Ears and bullae
  - Pharynx/larynx
  - Skull trauma (fractures and luxations)
  - Dental radiography (*a veterinary dentist will be commissioned to provide this content*)
  - Miscellaneous
    - Neoplasia, osteomyelitis, general bone disease

## Head and Neck 2: Ultrasonography and MRI (P)

- Normal anatomy and pathology associated with
  - Eyes
  - Larynx
  - Trachea
  - Lymph nodes
  - Salivary glands
  - Thyroid
  - Parathyroid
  - Bone
  - Muscle and tendon
    - The theory for muscle and tendon is covered in a separate unit – a practical session should be incorporated into the day
- MRI
  - When to consider MRI
  - Uses and limitations

## Echocardiography 1 (P)

- Basic ultrasound physics and machine settings
- Understanding the difference between cardiac versus abdominal machine settings and probe types
- Patient preparation and positioning, including the pros and cons of chemical restraint
- Cardiac anatomy and basic physiology
- Normal echocardiographic appearance of the heart and pericardium
  - 2D measurements of the LA and LV in adult heart disease
  - Pros and cons of M-mode
- Mitral valve disease
- Pericardial disease
  - Idiopathic PE
  - PE secondary to neoplasia
  - Ultrasound guided pericardiocentesis
- Interpretation of echocardiography findings alongside radiography and clinical signs
  - Understanding of left versus right sided congestive failure

## Echocardiography 2 (P)

- Acquired heart disease
  - DCM
  - Feline cardiomyopathies
    - Including thrombi
  - Endocarditis
- Congenital heart disease
  - Understanding the principles of echocardiographic changes expected with congenital heart disease
    - Patent ductus arteriosus
    - Pulmonic stenosis
    - Subvalvular aortic stenosis
    - VSD
    - Mitral valve and tricuspid valve dysplasia
  - Including an understanding of:
    - Which conditions can be treated by an interventional procedure
    - When to refer
- Basic principles of Doppler

## Neurodiagnostic Imaging

- Neuroanatomical localisation and decision making–  
Selecting the most appropriate modality to image the neurological patient (*a neurologist will be commissioned to record this webinar*)
- Radiography
  - Patient preparation, positioning and standard projections
  - Normal radiographic anatomy
  - Radiographic pathology
- Myelography
  - Principles and indications for myelography
  - Myelographic technique
  - Interpretation of myelograms and abnormalities
  - Myelographic complications
- CT
  - Principles of CT
  - When to consider CT
  - Uses and limitations
  - Interpretive principles of CT
  - CT appearance of common pathologies /differential diagnoses
- MRI
  - Principles of MRI
  - When to consider MRI
  - Uses and limitations
  - Interpretive principles of MRI
  - MRI appearance of common pathologies/differential diagnoses

(P): Practical courses

It should be noted that practical courses may include a combination of demonstrations, video clips, display of equipment, case based workshops.