Reference Number	C-VP.1
Module Title	Basic Tissue Pathology, Necropsy and Biopsy
Category and Value	C – 10 credits
Study Hours	100

Introduction

Veterinary pathology is pivotal to enhancing our comprehension of the complexity of animal diseases, which will support medical and surgical therapies and progression of clinical veterinary research. There is a need for improved understanding of pathological techniques to augment the interpretation of surgical biopsy reports and confidence in performing and assessing necropsies.

This module is aimed at veterinary practitioners intending to consolidate knowledge of the subject gained at undergraduate level, and to develop an in-depth understanding of the application of that knowledge in a practice environment in relation to basic tissue pathology.

Coverage of this module may be integrated with others, particularly other B and C modules. All candidates will normally have completed A-FAVP.1 Foundations of Advanced Veterinary Practice module, and at least one of the practice B modules, before undertaking a C module.

Aims

This module will endeavour to enable the student to develop the following:
- Review and optimisation of pathological techniques for selection and submission of samples to relevant diagnostic pathologists.
- An expanded understanding of the molecular and cellular basis of disease processes in animals.
- Application of a greater appreciation of these fundamental pathological processes to improve the ability to interpret abnormal events at a macroscopic and histological level.

Learning Outcomes

At the end of the module, the candidate should be able to:

1. Understand the basic principles of general tissue pathology.
2. Organise and safely conduct a thorough necropsy in the context of the clinical environment.
3. Organise, collect, and submit appropriate samples from biopsies, cytology, and necropsy examination for subsequent pathological evaluation.
4. Collate relevant information from the clinical presentation for the pathologist to optimise evaluation of tissue samples.
5. Review and integrate findings from the clinical history, macroscopic examination, clinical pathology, and histopathology.

6. Be capable of critically appraising pathological reports and utilising current literature to interpret the findings in the context of the clinical presentation.
7. Review the outcomes of the cases to improve future performance.

Module Content

Health and Safety
- Legislation regarding safety at work and COSHH
- Forensic pathology and evidence
- Notifiable diseases
- Zoonoses
- Organisation and responsibility in a team environment
- Disposal of waste and handling of hazardous materials
- Chemical safety (fixatives, processing chemicals, stains)
- Packaging and handling of pathology materials

Welfare and Ethics
- Professional relationships
- Consent for necropsy examination
- Retention of tissues
- Euthanasia and impact on sampling
- Identification and labelling

Biopsy and Cytology
- Choice of sample – needle, excision, endoscopy
- Preparation of samples
- Preservation and choice of fixatives
- Processing for examination
- Understand the relative advantages/disadvantages of fine needle aspirates, needle biopsies and excisional biopsies and their integrative roles in case diagnosis

Necropsy Examination
- Preparation and equipment
- Necropsy techniques
- Description and recording of findings (manual and computer based)
- Sampling and preservation of tissues and choice of fixatives for paraffin wax embedding, frozen sections, bone marrow, bacteriology, virology, parasitology, electron microscopy, PCR
- Sampling for toxicology/poisoning

General pathology tissue theory
- Processing and sectioning
- Staining including special stains, immunohistochemistry (IHC) and in situ hybridisation (ISH)
- Basic pathological processes of cellular adaptation, injury and death, inflammation, tissue renewal, healing and repair, haemodynamic disorders, immune diseases, and neoplasia
- Histological appearance of basic pathological changes in organ systems

- Integration of pathology findings with the clinical presentation and other diagnostic findings
- Interpretation of pathology diagnostic reports

Assessment Strategy

Module providers are responsible for deciding on assessment strategies and methods, subject to accreditation by RCVS.