STANDARDS
The objective of the module is to enable the candidate to consolidate clinical knowledge gained at undergraduate level, and to develop an in depth understanding of the application of that knowledge in a practice environment in relation to laboratory medicine diagnostics.

ASSESSMENT STRATEGY FOR THIS MODULE
It is suggested that this module could be assessed by the following methods:

• A case log of 20 cases that documents the candidate’s experience over the period that the module is being completed.

• A casebook of three cases, each of up to 1,500 words in length. These cases should be selected to demonstrate the candidate’s ability to use the competences that have been acquired to cope with a challenging situation, with the use of laboratory diagnostics, rather than necessarily using classic text book cases of particular conditions.

• A reflective essay, of 8,000 words, completed at the end of the module, reflecting upon how the course of study has resulted in a more competent practitioner. This may be incorporated into the final reflective essay to be produced before the full qualification is awarded.

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

• Thoroughly understand the pathophysiological basis of changes in laboratory test results.
• Show thorough familiarity with the interpretation of laboratory test results in relation to other test results and the clinical condition.
• Review and constructively criticise current literature on the specialty, to enable them to determine the relevance to their current practice.
• Utilise their understanding of evidence based medicine and decision analysis to develop practical diagnostic protocols for their patients.
• Recognise when a case is truly unusual and become familiar with information resources available to enable them to deal with such cases.
• Recognise when a case is beyond their personal or practice capabilities for continued testing and monitoring.
UNDERPINNING KNOWLEDGE

Basic guidelines for set up and maintenance of an in practice laboratory

- Choosing and evaluating equipment and its performance for haematology, biochemistry, for in house/office/near patient testing
- Routine maintenance and calibration of equipment
- Standardisation and quality control of laboratory tests, internal and external quality control schemes. Quality assurance schemes. Procedures to apply when these are out of control
- Standard operating procedures (SOP’S) for all tests and equipment.
- Preparation of good quality blood films, cytology smears from fine needle aspirates (FNA) and fluid samples
- Microscopy; blood films, urine analysis and identification of common endo and ecto parasites.
- Handling and evaluation of haematology, chemistry, microbiology, and cytology samples for their condition and suitability for shipping to reference laboratories for testing

2 Cytology

- Understand the relative advantages/disadvantages of FNA and cytology, needle aspirate and biopsies, impression smear cytology and histology, and their integration in case analysis
- Guidelines for choosing an external testing laboratory for both routine testing and special tests (e.g. endocrinology, immunology)

3 Laboratory data analysis; general principles

- Quality of samples
- Effects of interferences; e.g. aging, haemolysis, lipidaemia, drugs on test results.
- Use of reference intervals (normal values) for interpretation of results

4 Evaluation of results in relation to clinical and historical information

- Evaluation of initial in house and/or external haematology and chemistry results as a basis for assessing the need for further special testing (e.g. endocrinology, immunology, virology)

5 Special species (select one of the following)
  a Small companion animals (including rabbits)
  b Large companion animals (including horses)
  c Food and production animals (including poultry)
  d Other – birds, reptiles etc (including smallholders’ poultry)

For the chosen group:

- Use of laboratory tests in the diagnosis of anaemia and other haematopoietic abnormalities and an understanding of the pathophysiology of the changes.
- Evaluation of blood films
- Cytological evaluation of common samples (e.g. fluids, FNA, aspirates)
- Use of laboratory tests as aids in the diagnosis and monitoring of diseases i.e. renal, hepatic, gastrointestinal, endocrine, neoplasia, infectious disease.