



Certificate of Expert Practice (CEP) in Molecular Pathology

The CEP in Molecular Pathology consists of six two-week modules. It is assessed through the submission of two reflective statements (one at the mid-point of the course and one at the end of the course) and an on-line multiple-choice examination the pass mark for which is 65%.

Modules

In brief the six modules and their learning outcomes are as follows:

Module 1 – Introduction to Molecular Pathology

This module will provide you with the prerequisite information to enable you to understand the topics discussed in later modules. It will introduce the concepts, provide background reading and highlight important themes that will support a greater understanding of Molecular Pathology.

Module 2 - Molecular Pathology Technology

In this module you will learn:

- An overview of the theory and practice of molecular technology
- Amplification techniques
- Probe techniques
- DNA sequencing
- Good laboratory Practice in Molecular Pathology
- Quality considerations for a Molecular Pathology service

Module 3 - Introduction to Bioinformatics

At the end of this you will be able to:

- give an overview of bioinformatics as a discipline and as a practice
- explain and carry out basic homology searches
- explain the method, and importance, of sequencing by synthesis
- give an overview of Illumina sequencing including practical steps and principle
- understand the principles of real time sequencing
- understand the basic principles of alignment and assembly of sequencing data.

Module 4 - Constitutional Genetics

Upon completion of this module, you will be able to:

- Provide an explanation of how parental characteristics are passed to offspring
- Give an example of how an error in gene expression results in disease.
- Explain the difference between constitutional genetic disease and genetic changes that result in disease.
- Understand how errors in genes result in whole body disorders.
- Understand the tests used in diagnosing disorders in embryos pre-implantation.
- Appreciate the ethical issues surrounding genetic testing.

Module 5 - Genetics of Haematological Cancers

At the end of this module you will:

- Understand that genetics defines subgroups of certain diseases of Haematopoietic and Lymphoid Tissues according to the WHO.
- Understand that genetic findings are incorporated into a variety of prognostic data.
- Be aware that gene mutations are an evolving part of the diagnostic testing repertoire.
- Be able to demonstrate basic knowledge of common genetic abnormalities seen in myeloid and lymphoid neoplasms.

Module 6 - Genetics of Solid Tumour Cancers

At the end of this module you will:

- Understand the complexities involved in the genetics of solid tumours.
- Have knowledge of diagnosis, classification and prognosis of sarcomas.
- Gain insight into the diagnosis, classification and prognosis of at least one carcinoma subtype.
- Demonstrate knowledge of the significance of molecular pathology from a treatment/therapeutic perspective