



Certificate of Expert Practice (CEP) in Laboratory Information Technology and Clinical Informatics

The CEP in Clinical Informatics and Laboratory IT consists of five two-week modules and one module which last three weeks because Easter falls during that module which in 2024 is Module Five. 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 and short answer question examination the pass mark for which is 65%.

Modules

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

Module 1 – Medical Laboratory Information Technology

- Understand the contribution of information systems to healthcare
- Be aware of the common information systems in healthcare
- Understand the key functions of information systems in healthcare and how they support patient care
- Be aware of the key information systems in the medical laboratory, specifically laboratory information management systems (LIMS)
- Understand the key functions of LIMS systems and other laboratory systems, and how they interact with upstream and downstream systems (PAS, order comms, analysers, etc)
- Understand the roles of healthcare scientists in the use and management of healthcare information systems

Module 2 – Data Analysis, Interpretation and Presentation

- Be able to identify and describe data collection methods.
- Be able to describe the advantages and disadvantages of different methods of data collection.
- Be able to describe data storage methods, and at a basic level the advantages and disadvantages of each type.
- Be able to describe and identify governance requirements for data storage types.
- Be able to describe the advantages and disadvantages of different methods of data storage.

- Be able to Identify and describe data transfer/access methods.
- Be able to describe the advantages and disadvantages of different methods of data streaming transfer.
- Gain an understanding of basic concepts in statistics including populations and data types.
- Gain an understand of descriptive statistics.
- Gain an understanding of inferential statistics.
- Gain an understanding of how data and statistics can be misused as well as different ways of displaying data.

Module 3 – Clinical and Data Governance

- Be able to detail the forms of information encountered on a daily basis and describe what safeguards/controls are in place.
- Be able to apply the relevant ISO or other accreditation standards to different forms of data.
- Be able to identify potential sources of data breeches and explain the actions that should be taken in the event that one occurs.
- To understand the impact of home working on clinical and data governance.
- Be aware of business continuity and disaster recovery and how these can be applied within a laboratory setting.

Module 4 – Procurement and Project Management

- How Laboratory IT procurement works.
- A methodology for specifying and evaluating IT systems.
- A process for ensuring value for money in procurement.
- An understanding of the regulatory framework around procurement.
- An overview of project management and governance.
- Systems design.
- A structured approach to testing.
- Process change as applied to new IT systems.
- Operational readiness.

Module 5 – Systems Interfaces and Middleware

- Appreciation of the significance of the use of coding in the design and maintenance of a LIMS – logical design, clarity of content and inter-system communication benefits.
- Understand how standardisation can facilitate electronic communication through the use of agreed terms of reference and structure of messages.
- Review and exploration of the broad types of system interfaces commonly encountered within the Pathology environment.
- Consideration of the potential of integration between systems, some of the methods used to achieve it and the difference between integration and interfacing.
- Identification of what constitutes Middleware, its function and its potential redundancy in a multi system environment.
- Broadened appreciation of how the items discussed may impact decisions and processes within the Pathology environment.

Module 6 – Digital Futures

- Be able to display an understanding of laboratory automation.
- Be able to describe what digital pathology is, how it works and how it is currently implemented.
- Be able to display a basic understanding of artificial intelligence and how it is currently utilised in pathology.
- Have a basic knowledge of the standards and ethical considerations relating to digital pathology and artificial intelligence.
- Be able to clearly articulate use cases and benefits for automation, digital pathology and artificial intelligence within your own departments.
- Have a basic understanding of some of the other technologies being explored to enhance pathology (e.g. augmented reality, virtual reality and 3D pathology)