

# HIGHER DIPLOMA IN DESIGN AND MANUFACTURE OF BIOPHARMACEUTICALS

---

## Programme Learning Outcomes

Programme Learning Outcomes for Higher Diploma in Design and Manufacture of BioPharmaceuticals (NFQ Level 8, Major Award)

On successful completion of this programme, students should be able to:

- Describe the fundamental principles of biochemistry and cell biology as they relate to health and disease
- Explain the development and design of major classes of biological drugs
- Describe an understanding Process Engineering principles as they relate to the production of BioPharmaceuticals
- Assess the key parameters to be considered in upstream processing, downstream processing and the formulation of biological drugs
- Describe the key concepts and principles of quality standards and regulations (eg. current Good Manufacturing Practices, cGMP) and their integration in the production of a sterile BioPharmaceutical products.
- Demonstrate competence in the laboratory-scale production of a biological protein drug in accordance with written Standard Operating Procedures (SOP's).
- Design, implement and evaluate scientific investigations and assess, interpret and understand experimental data generated.
- Recognise and articulate personal and professional skills in the context of career planning, and demonstrate an ability to write an effective application.