

# POSTGRADUATE DIPLOMA IN PHARMACEUTICAL AND BIOPHARMACEUTICAL ENGINEERING

## Overview

NFQ Level 9, Major Award

The Postgraduate Diploma in Pharmaceutical and Biopharmaceutical Engineering is a full-time programme running for 9 months or a part-time programme running for a minimum of 18 months over 2 academic years (maximum 45 months over 5 academic years) from the date of first registration for the programme.

Students take modules to the value of 60 credits. The choice of modules is subject to the approval of the Programme Coordinator.

## Individual Modules

Candidates who satisfy the programme eligibility criteria may, subject to the approval of the Programme Coordinator, be permitted to take individual modules, as part of UCC's commitment to Continuing Professional Development (CPD), and be provided with a relevant transcript of marks.

## MEngSc (Pharmaceutical and Biopharmaceutical Engineering)

Students who pass (40%) in each of the taught modules in the examinations of the Postgraduate Diploma in Pharmaceutical and Biopharmaceutical Engineering, and achieve an aggregate of at least 50% across all modules to the value of 60 credits at the first attempt, are deemed eligible to apply for transfer to the MEngSc (Pharmaceutical and Biopharmaceutical Engineering) (<https://ucc-ie-public.courseleaf.com/programmes/menpbe/>). Students who opt to transfer to the MEngSc will not be conferred with the Postgraduate Diploma.

## Programme Requirements

For information about modules, module choice, options and credit weightings, please go to Programme Requirements (p. 1).

## Programme Requirements

Code	Title	Credits
Students take modules to the value of <b>60</b> credits from the following: 60		
PE6004	Biopharmaceutical Supporting Systems (5)	
PE6010	Pharmaceutical Engineering (5)	
PE6011	Biopharmaceutical Engineering (5)	
PE6012	Pharmaceutical Process Equipment, Materials and Mechanical Design (5)	
PE6013	Powder and Particle Technology and Unit Operations (5)	
PE6019	Process Analytical Technology (5)	
PE6027	Advanced Biopharmaceutical Engineering (5)	
CM6010	Introductory Pharmaceutical Chemistry (5)	
PE6016	Process Optimisation in the Pharmaceutical Industry (5)	
PE6018	Pharmaceutical Process Validation and Quality (5)	

PE6022	Aseptic Manufacturing Design (5)
PE6024	Process Safety Engineering (5)
PE6026	Project Engineering - From Concept to Completion (5)
<b>Total Credits</b>	<b>60</b>

## Examinations

Full details and regulations governing Examinations for each programme will be contained in the *Marks and Standards Book* and for each module in the *Book of Modules*.

## Programme Learning Outcomes

### Programme Learning Outcomes for Postgraduate Diploma in Pharmaceutical and Biopharmaceutical Engineering (NFQ Level 9, Major Award)

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

- Apply an enhanced knowledge and understanding of the mathematics, sciences, engineering sciences and technologies to pharmaceutical and biopharmaceutical engineering;
- Identify, formulate, analyse and solve problems related to pharmaceutical and biopharmaceutical engineering;
- Design pharmaceutical and biopharmaceutical manufacturing facilities and processes, including unfamiliar, ill-defined scenarios, underpinned by a sustainability informed paradigm, taking account of environmental, health and safety and risk factors, and know how to apply relevant codes of practice, industry standards and emerging practices and technologies;
- Gather experimental data, apply a range of standard and specialized research tools and techniques and conduct critical evaluation of results;
- Reflect and act on social and ethical responsibilities in the practice of engineering, including the responsibilities towards developing sustainable processes and operations;
- Work effectively as an individual and in teams in planning and carrying through on assignments and projects in a lifelong learning context;
- Communicate effectively with the engineering community and with society at large.