

MENGS (PHARMACEUTICAL AND BIOPHARMACEUTICAL ENGINEERING)

Overview

NFQ Level 9, Major Award

The MEngSc in Pharmaceutical and Biopharmaceutical Engineering is a full-time programme running for 12 months from the date of first registration for the programme or a part-time programme running for a minimum of 24 months (maximum 60 months) from the date of first registration for the programme.

In Part I students take modules to the value of 60 credits.

Part II consists of a Dissertation to the value of 30 credits. The choice of modules is subject to the approval of the Programme Director.

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.

Postgraduate Diploma in Pharmaceutical and Biopharmaceutical Engineering

Students who pass all modules in Part I but fail to achieve the requisite grade of 50% across the taught modules will be eligible for the award of a Postgraduate Diploma in Pharmaceutical and Biopharmaceutical Engineering (<https://ucc-ie-public.courseleaf.com/programmes/pdpbe/>). A candidate who passes Part I of the programme and who does not wish to proceed to Part II, may opt to be conferred with a Postgraduate Diploma in Pharmaceutical and Biopharmaceutical Engineering.

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 90 credits as follows - modules to the value of 60 credits in Part I and a Dissertation in Part II (30 credits):

Part I

Students take 60 credits from the following: 60

Elective Modules		
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)	

Part II

Students take 30 credits as follows:

Core Modules		
PE6021	Dissertation in Pharmaceutical and Biopharmaceutical Engineering	30

Total Credits 90

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 MEngSc 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;
- Plan, research, execute and oversee a substantial research project, critically analyse and interpret data, and effectively disseminate the results;
- 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.