

MENGSC IN ENGINEERING IN PHARMACEUTICAL AND BIOPHARMACEUTICAL SYSTEMS

Overview

Status: Active

National Framework Of Qualifications (NFQ) Level: 9

NFQ Award Class: Major Award

Duration Full Time: 12 Month(s)

Total Credits: 90

Delivery Method: In-Person

Connected Curriculum:

- Employability
- Research Based Teaching
- Sustainability

Sustainable Development Goals (SDGs):

- Decent Work and Economic Growth
- Responsible Consumption and Production

Graduate Attributes:

- Creator, evaluator and communicator of knowledge

Work-Integrated Learning (Including Placement):

No

The MEngSc in Engineering in Pharmaceutical and Biopharmaceutical Systems is a full-time programme that runs for 12 months.

Exit Award - Postgraduate Diploma in Engineering in Pharmaceutical and Biopharmaceutical Systems

Students who achieve 40% in each individual taught module but fail to achieve the requisite grade of 50% across the taught modules, may opt to exit the programme and graduate with a Postgraduate Diploma in Engineering in Pharmaceutical and Biopharmaceutical Systems (<https://ucc-ie-public.courseleaf.com/programmes/menepb/programmes/pd-tbc/>).

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 – 60 credits of taught modules and 30 credits of research modules		
Taught Modules		
Students take 60 credits as follows - all listed core modules (50 credits) and 10 credits of elective modules:		
Core Modules		

MG6902	Project Management (Pharma and Biopharma Manufacturing)	5
PE6009	Pharmaceutical Engineering	5
PE6011	Biopharmaceutical Engineering	5
PE6022	Aseptic Manufacturing Design	5
PE6023	Pharmaceutical and Biopharmaceutical Utilities and Auxiliaries	5
PE6024	Process Safety Engineering	5
PE6026	Project Engineering - From Concept to Completion	5
PE6032	Pharmaceutical Industry Advances and Developments	5
PE6057	Sustainability in Pharmaceutical and Biopharmaceutical Manufacturing	5
PE6058	Contamination Control in Pharmaceutical and Biopharmaceutical Manufacturing	5

Elective Modules

Students take modules to the value of **10** credits from the following (at least one module per semester):

PE6007	Mechanical Design of Process Equipment (5)
PE6016	Process Optimisation and Scale-up in the Pharmaceutical Industry (5)
PE6019	Process Analytical Technology (5)
PE6056	Pharmaceutical Process Validation (5)

Research Module

PE6051	Dissertation in Engineering in Pharmaceutical and Biopharmaceutical Systems	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 Engineering in Pharmaceutical and Biopharmaceutical Systems, 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;
- Effectively design experiments and 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.