

POSTGRADUATE DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING, PROCESS AND AUTOMATION SYSTEMS)

Overview

NFQ Level 9, Major Award

Exit Award only

A candidate on the MEngSc Mechanical Engineering (Manufacturing, Process and Automation Systems) (<https://ucc-ie-public.courseleaf.com/programmes/menmec/>) programme, who passes Part I but does not achieve an average mark of at least 50% across the taught modules excluding the Preliminary Research Project (ME6019) or does not achieve a mark of at least 50% in the Preliminary Research Project (ME6019), or does not achieve a mark of at least 50% in the Dissertation in Mechanical Engineering (ME6020) will be awarded a Postgraduate Diploma in Mechanical Engineering (Manufacturing, Process and Automation Systems).

A candidate on the MEngSc Mechanical Engineering (Manufacturing, Process and Automation Systems) (<https://ucc-ie-public.courseleaf.com/programmes/menmec/>) programme, who passes the Part I examination and does not wish to proceed to Part II, may opt to be conferred with a Postgraduate Diploma in Mechanical Engineering (Manufacturing, Process and Automation Systems).

Programme Requirements

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

Programme Requirements

Students take **60** credits in Part I as follows – all listed core modules (**20** credits) and elective modules to the value of **40** credits:

Core Modules

Code	Title	Credits
ME6019	Preliminary Research Project	10
MG6021	Operations Management	5
MG6315	Project Management	5

Elective Modules

Students take modules to the value of **40** credits from the following, with at least **25** credits from Group A, the balance of credits from Group B, and with no more than **30** credits of elective modules selected in any single Semester.

Select at least 25 credits from the following:		
ME6002	CAD/CAM	
ME6006	Non-Destructive Testing	
ME6007	Mechanical Systems	
ME6008	Robotics ¹	
ME6012	Advanced Robotics ¹	
CE6024	Finite Element Analysis	
CS6506	Programming in Python ²	
CS6507	Programming in Python with Data Science Applications ²	

NE6015	Data Analytics for Engineering
EE4012	Biomedical Systems
EE6061	Industrial Automation and Control
<i>Group B</i>	
Select remaining credits from the following:	
PE6009	Pharmaceutical Engineering
PE6002	Optimisation and Continuous Process Improvement
PE6007	Mechanical Design of Process Equipment
CE3010	Energy in Buildings
CE4016	Energy Systems in Buildings
EE6046	Introduction to Micro Electromechanical Systems (MEMS)

Total Credits **60**

¹ Students wishing to take ME6012 must also take ME6008.

² Students wishing to take CS6507 must also take CS6506.

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 Mechanical Engineering (Manufacturing, Process and Automation Systems) (NFQ Level 9, Major Award)

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

- Demonstrate a thorough understanding of the principles and theoretical bases of modern manufacturing techniques, automation, and production processes;
- Identify appropriate manufacturing systems for different production requirements, and describe their performance using appropriate analytical and modelling methods;
- Apply appropriate technology, quality tools and manufacturing methodology to design, re-design and continuously improve the manufacturing operations of engineering companies;
- Plan, research, execute and oversee experiments and research projects, critically analyse and interpret data, and effectively disseminate the results;
- Work effectively as a member of a multidisciplinary team, be self-motivated and able to work independently, and demonstrate leadership;
- Communicate effectively, via appropriate presentation techniques and technical publications, to other engineers, professionals, and society at large;
- Understand the role of the mechanical engineer in society and his/her responsibility for ethical, environmental and safety issues.