

ME (CIVIL, STRUCTURAL AND ENVIRONMENTAL) ENGINEERING

Overview

NFQ Level 9, Major Award

No student may register for Fifth Year of the ME in Civil, Structural and Environmental Engineering until he/she has passed the Fourth ME Pathway University Examination in Civil, Structural and Environmental Engineering (<https://ucc-ie-public.courseleaf.com/programmes/cembp/>). In order to be admitted to the Final ME in Civil, Structural and Environmental Engineering Degree Examination a student must have satisfactorily attended, subsequent to passing the Fourth ME Pathway University Examination in Civil, Structural and Environmental Engineering, prescribed modules to the value of **60** credits.

NOTE: Elective modules are subject to timetabling and other constraints and should be chosen in consultation with the programme director.

Programme Requirements

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

Programme Requirements

Code	Title	Credits
Year 1 - Engineering		
Students take 60 credits as follows:		
<i>Core Modules</i>		
CE1003	Introduction to Structural and Civil Engineering	5
CE1005	Engineering Computation and Problem Solving	5
CM1001	Chemistry for Engineers	5
EE1007	Introduction to Electrical and Electronic Engineering	5
MA1011	Mathematical Methods I	5
MA1012	Mathematical Methods II	5
ME1002	Engineering Thermodynamics	5
NE1001	Introduction to Energy Engineering	5
PE1003	Introduction to Process and Chemical Engineering	5
PY1006	Physics for Engineers II	5
PY1012	Physics for Engineers I	10
Year 2 - Civil, Structural and Environmental Engineering		
Students take 60 credits as follows:		
<i>Core Modules</i>		
EG2001	Engineering Mechanics with Transform Methods	5
EG2002	Numerical Methods and Programming	5
CE2001	Solid and Structural Mechanics I	5
CE2002	Solid and Structural Mechanics II	5
CE2003	Fluids I	5
CE2004	Fluids II	5
CE2005	Surveying - Theory and Practice	5
CE2007	Design Studio I	5
CE2009	BIM 1: Modelling and Visualisation	5
MA2013	Mathematics for Engineering	5

PE2003	Heat Transfer	5
ST1051	Introduction to Probability and Statistics	5

Year 3 - Civil, Structural and Environmental Engineering

Students take **60** credits as follows:

Core Modules

CE3002	Solid and Structural Mechanics III	5
CE3003	Design Studio II (Steel and Timber)	5
CE3004	Mechanics of Soils I	5
CE3005	Mechanics of Soils II	5
CE3006	Construction Project Management	5
CE3007	Hydraulics I	5
CE3008	Design Studio III (Reinforced Concrete and Masonry)	5
GL3006	Geology for Engineers	5
CE3009	Environmental Engineering- Wet	5
CE3010	Energy in Buildings	5
CE3012	Materials and Sustainability	5
NE3003	Sustainable Energy	5

Year 4 - ME Pathway Civil, Structural and Environmental Engineering

Students take **60** credits as follows – all listed core modules (**30** credits) in Part A and a Placement module (**30** credits) in Part B:

Part A

Core Modules

CE4004	Design Studio IV (Reinforced Concrete)	5
CE4006	Structural Analysis	5
CE4007	Geotechnical Engineering	5
CE4010	Water and Wastewater Treatment	5
CE4012	Traffic and Highways	5
CE4020	Environmental Hydrodynamics	5

Part B

Core Modules

CE6008	ME Work Placement	30
--------	-------------------	----

Year 5 - ME (Civil, Structural and Environmental Engineering)

Students take **60** credits as follows – all listed core modules (**45** credits) and **15** credits of elective modules:

Core Modules

CE6009	ME Dissertation	20
CE6010	ME Interdisciplinary Design Project	10
CE6040	Civil Engineering Systems	5
MG4052	Management in Practice	5
NE6004	Sustainability, Bioenergy and Circular Economy Systems	5

Elective Modules

15

Students take modules to the value of **15** credits as follows:

CE4015	Environmental Hydraulics (5)	
CE4024	Progressing Toward Sustainable Industry (5)	
CE6024	Finite Element Analysis (5)	
CE6041	Applied Elasticity (5)	
CE6042	Transportation and Energy (5)	
CE6043	Harbour and Coastal Engineering (5)	
CE6044	Prestressed Concrete (5)	
NE6015	Data Analytics for Engineering (5)	

NE6016 Energy Systems in Buildings (5)

Total Credits 300

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 ME (Civil, Structural and Environmental) (NFQ Level 9, Major Award)

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

- Systematically apply advanced knowledge from mathematics, science and engineering to solve complex and/or unbounded problems in Civil, Structural and Environmental Engineering;
- Apply information technology and software development techniques to visualise, analyse and solve a broad range of problems in Civil, Structural and Environmental Engineering to an advanced level;
- Demonstrate the ability to adjust, self-evaluate and critically alter practice in response to evolving project requirements;
- Design components and systems to the standard required of a professional engineer demonstrating logical thinking and imaginative skills to provide the most appropriate solution;
- Critically evaluate the engineering, economic, environmental and societal impacts of proposed solutions;
- Critically evaluate published work at the forefront of the field in the context of a particular engineering solution;
- Work effectively as an individual, in teams and in multi-disciplinary settings with the ability to appropriately plan and meet the role responsibilities, including leadership qualities;
- Communicate effectively engineering-related information and the results of one's own work (in both oral and written form) while demonstrating appreciation of the expertise of the target audience;
- Demonstrate knowledge and understanding of the need for high ethical standards in their professional practice of engineering to the standards expected of a Chartered Engineer.