MASTER OF SCIENCE (CIVIL ENGINEERING)

The Master of Science (Civil Engineering) programme, or MSc (CE), is hosted by the Department of Civil & Environmental Engineering. To qualify for the MSc (CE) degree with or without specialization, a candidate must successfully complete a programme of study consisting of at least 40 Modular Credits (MCs). At least 30 MCs must be taken from 5000 and 6000 Level modules. In addition, a student must obtain a minimum Cumulative Average Point (CAP) of 3.00 (equivalent to an average of grade of B-) for the best modules equivalent to 40 MCs (inclusive of compulsory modules, where required). A student may choose to graduate with the following degrees:

- MSc (Civil Engineering)
- MSc (Civil Engineering) with specialization in Structural Engineering
- MSc (Civil Engineering) with specialization in Geotechnical Engineering
- MSc (Civil Engineering) with specialization in Infrastructure Project Management
- MSc (Civil Engineering) with specialization in Transportation Engineering

Students who wish to graduate with a specialization, they must also meet the requirements for that specialization stipulated below.

1. Specialization in Structural Engineering

Candidates who wish to obtain the MSc (CE) with specialization in Structural Engineering must pass five (20 MCs) of the following distinct modules, each with a grade point of at least 2.0 (Grade C):

CE5509 Advanced Structural Steel Design
CE5510 Advanced Structural Concrete Design
CE5513 Plastic analysis of structures
CE5604 Advanced Concrete Technology
CE5610 Assessment and Retrofit of Concrete Structures
CE5611 Precast Concrete Technology
CE6006 Advanced Finite Element Analysis
CE6705 Analysis and Design of Buildings against Hazards
ME5103 Plates and Shells (from AY2017/2018)
(Students who have read CE5514 Plate & Shells are not allowed to read ME5103)

Should a student wish, with valid reasons, to replace any of the above modules by another appropriate module, approval must be sought from the Head, Department of Civil & Environmental Engineering or his nominee.

The remaining five modules (20 MCs) to satisfy the degree requirements may be selected from Level 5000 and 6000 modules offered by the Department of Civil & Environmental Engineering. For modules offered by other Departments, prior approval must be sought from the Head, Department of Civil & Environmental Engineering or his nominee.

2. Specialization in Geotechnical Engineering

Candidates who wish to obtain the MSc (CE) with specialization in Geotechnical Engineering must pass five (20 MCs) of the following distinct modules, each with a grade point of at least 2.0 (Grade C):

CE5101 Seepage and Consolidation of Soils
CE5104 Underground Space
CE5105 Analytical and Numerical Methods in Foundation Engineering
CE5106 Ground Improvement
CE5107 Pile Foundation
CE5108 Earth Retaining Structures

Should a student wish, with valid reasons, to replace any of the above modules by another appropriate module, approval must be sought from the Head, Department of Civil & Environmental Engineering or his nominee.

The remaining five modules (20 MCs) to satisfy the degree requirements may be selected from level 5000 and 6000 modules offered by the Department of Civil & Environmental Engineering. For modules offered by other Departments, prior approval must be sought from the Head, Department of Civil & Environmental Engineering or his nominee.

3. Specialization in Infrastructure Project Management

For this specialization, students must pass at least five (20 MCs) of the following distinct modules, each with a grade point of at least 2.0 (Grade C):

CE5603	Engineering Economics and Project Evaluation
CE5804	Global Infrastructure Project Management
CE5805	Construction Equipment and Methods
CE5806	Construction Project and Site Control
PM5103	Contract Management
PM5109	Project Management Law

Should a student wish, with valid reasons, to replace any of the above modules by another appropriate module, approval must be sought from the Head, Department of Civil & Environmental Engineering or his nominee.

In addition, he/she must complete at least three (12 MCs) of the following elective modules:

CE5207	Pavement Network Management Systems
CE5208	Transport Infrastructure Asset Management (*new module from AY2019/2020)
CE5604	Advanced Concrete Technology
CE5610	Assessment and Retrofit of Concrete Structures
CE5611	Precast Concrete Technology
CE5880	Topics in Project Management Engineering
CE6001	Operations and Management of Infrastructure Systems
PM5105	Development Finance
PM5114	Managing Complex Projects
IE5122	Statistical Quality Control
IE5208	Systems Approach to Project Management
IE5404	Large Scale Systems Engineering
CN5191	Project engineering
SH5201	Hazard Identification and Evaluation Techniques
SH5401	SHE and Quality Management Systems

The remaining two modules (8 MCs) to satisfy the degree requirements may be selected from Level 5000 and 6000 modules offered by the Department of Civil & Environmental Engineering, which also include the above mentioned modules. For modules offered by other Departments (except those listed above), prior approval must be sought from the Head, Department of Civil & Environmental Engineering or his nominee.

Finally, students must ensure that at least five (20 MCs) of the ten modules to be counted for this specialization must be those offered by the Department of Civil & Environmental Engineering (i.e. with the CE prefix in the module code).

4. Specialization in Transportation Engineering

For this specialization, students must pass at least five (20 MCs) of the following distinct modules, each with a grade point of at least 2.0 (Grade C):

CE4221 Design of Land Transport Infrastructures
CE5203 Traffic Flow and Control
CE5204 Pavement Design and Rehabilitation
CE5205 Transportation Planning
CE5206 Urban Public Transportation Systems (*new module from AY2019/2020)
CE5207 Pavement Network Management Systems
CE5208 Transport Infrastructure Asset Management (*new module from AY2019/2020)
TP5025 Intelligent Transportation Systems
TP5026 Transport Management and Policy
TP5027 Transport Terminal and Freight Management
TP5028 Intermodal Transport Operations

For the remaining 20 MCs, up to 10 MCs may be level 4000 module/s offered by CEE Department or cross-faculty modules with prior approval from CEE Head of Department or his nominee. The remaining credits must be at level 5000 or 6000 offered by CEE Department.