4.2.2.2 Degree Requirements

To qualify for the MSc (Civil Engineering) degree with or without specialisation, 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 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).

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

Specialisation in Structural Engineering

Candidates who wish to obtain the MSc (Civil Engineering) with specialisation in Structural Engineering must pass at least five 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 have sufficient reason to replace any of the above modules by another appropriate module, approval must be sought from the Head, Department of Civil and 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 and Environmental Engineering. For modules outside the Department of Civil and Environmental Engineering, prior approval must be sought from the Head, Department of Civil and Environmental Engineering or his nominee.

**Specialisation in Geotechnical Engineering**

Candidates who wish to obtain the MSc (Civil Engineering) with specialisation 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 & Consolidation of Soils
- CE5104 Underground Space
- CE5105 Analytical & Numerical Methods in Foundation Engineering
- CE5106 Ground Improvement
- CE5107 Pile Foundation
- CE5108 Earth Retaining Structures

Should a student have sufficient reasons to replace any of the above modules by another appropriate module, approval must be sought from the Head, Department of Civil and 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 and Environmental Engineering. For modules outside the Department of Civil and Environmental Engineering, prior approval must be sought from the Head, Department of Civil and Environmental Engineering or his nominee.

**Specialisation in Infrastructure Project Management**

For this specialisation, students must pass at least five 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 & Methods
- CE5806 Construction Project and Site Control
- PM5103 Contract Management
- PM5109 Project Management Law

Should a student have sufficient reason to replace any of the above modules by another appropriate module, approval must be sought from the Head, Department of Civil and Environmental Engineering or his nominee. In addition, he/she must complete at least three (12 MCs) of the following 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
PM5104  Development Management
PM5105  Development Finance
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 and Environmental Engineering, which also include the above mentioned modules. For modules offered outside the Department of Civil and Environmental Engineering (except those listed above), prior approval must be sought from the Head, Department of Civil and Environmental Engineering or his nominee.

**Specialisation in Transportation Engineering**

For this specialisation, 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.

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

Note: Not all electives listed are necessarily available in any one year. All modules listed are of 4 MCs each.

For more details on the modules offered, please refer to the website at www.eng.nus.edu.sg/civil/programmes/MSc_ce.html