

Degree Requirements of MSc (Safety, Health and Environmental Technology) **(for cohorts AY2019/2020 to AY2020/2021)**

Course Requirements

The Master of Science (Safety, Health and Environmental Technology) Degree programme, or MSc (SHE), is hosted by the Department of Chemical and Biomolecular Engineering. The programme accepts both full time and part time students. To qualify for the MSc (SHE) Degree, a candidate must successfully complete a study consisting of at least 40 Modular Credits (MCs). Of the 40 MCs, at least 30 MCs must be at graduate level within the stipulated SHE Elective Modules or in a related discipline, the remaining credits may be from other levels in the same or other disciplines as approved by the Department. In addition, a student must obtain a minimum CAP of 3.0 (Grade B-) for the best modules equivalent to 40 MCs. A student may choose to graduate with one of the following:

- MSc (SHE) Degree;
- MSc (SHE) Degree with specialisation in Industrial Hygiene; or
- MSc (SHE) Degree with specialisation in Process Safety.

Modules for the MSc (SHE) Degree Programme *

Programme course modules are presented in the following three groups.

(i) Industrial Hygiene Elective Modules

SH5004	Fundamentals in Industrial Hygiene
SH5101	Industrial Toxicology
SH5102	Occupational Ergonomics
SH5103	Biosafety and Biosecurity
SH5104	Occupational Health
SH5105	Noise and Other Physical Hazards
SH5106	Radiation Safety
SH5107	Industrial Ventilation
SH5108	Chemical Hazard Management
SH5109	Biostatistics and Epidemiology
SH5110	Chemical Hazard Evaluation

(ii) Process Safety Elective Modules

SH5001	Fundamentals in Process Safety
SH5002	Fundamentals in Industrial Safety
SH5201	Hazard Identification and Evaluation Techniques
SH5202	Quantified Risk Analysis
SH5203	Resilience and Emergency Planning
SH5204	Industrial Safety Engineering
SH5205	Crisis and Incident Management
SH5206	Human Factors in Process Safety
SH5207	Process Safety Engineering
SH5208	Functional Safety for Process Industries
SH5401	Safety, Health, Environment & Quality Management System (or ESE5602 Environmental Management Systems)

(iii) General Elective Modules

SH5003	Fundamentals in Environmental Protection
SH5402	Advanced Safety, Health & Environment Management
SH5403	Independent Study
SH5404	Safety Health and Environmental Project (8 MC)
SH5405	Fire and Explosion Safety
SH5406	Research Methodology
SH5407	Sustainable Energy and Environment
SH5408	Electrical Safety

SH5666	Industrial Safety, Health and Environmental Practices (8 MC)
SH5880	Topics in Industrial Hygiene
SH5881	Topics in Process Safety
SH5882	Topics in Environmental Protection
ESE5202	Air Pollution Control Technology
ESE5204	Toxic and Hazardous Waste Management
ESE5205	Sludge and Solid Waste Management
ESE5402	Industrial Wastewater Control
ESE5403	Water Reclamation & Reuse
ESE5603	Pollution Minimization and Prevention

To be awarded with a specialisation, student must also meet specialisation requirements as stipulated below.

MSc (SHE) Degree

A candidate (full-time and part-time) must successfully complete a programme of study consisting of:

- a) at least 3 modules from (i) Industrial Hygiene Elective Modules,
- b) at least 3 modules from (ii) Process Safety Elective Modules, and
- c) any remaining modules from part (i) Industrial Hygiene Elective Modules, (ii) Process Safety Elective Modules, (iii) General Elective Modules, and up to 2 other modules subjected to the approval of the Department.

MSc (SHE) Degree with specialisation in Industrial Hygiene

A candidate (full-time and part-time) must successfully complete a programme of study consisting of:

- a) at least 6 modules from part (i) Industrial Hygiene Elective Modules,
- b) at least 2 modules from (ii) Process Safety Elective Modules, and
- c) any remaining modules from part (i) Industrial Hygiene Elective Modules, (ii) Process Safety Elective Modules, (iii) General Elective Modules, and up to 2 other modules subjected to the approval of the Department.

MSc (SHE) Degree with specialisation in Process Safety

A candidate (full-time and part-time) must successfully complete a programme of study consisting of:

- a) at least 6 modules from part (ii) Elective Modules in Process Safety,
- b) at least 2 modules from (i) Industrial Hygiene Elective Modules, and
- c) any remaining modules from part (i) Industrial Hygiene Elective Modules, (ii) Process Safety Elective Modules, (iii) General Elective Modules, and up to 2 other modules subjected to the approval of the Department.

Note: All modules are worth 4 MCs each except SH5404 and SH5666 are worth 8 MCs.

** Not all modules are necessary available in any one year.*