

## Environmental Engineering

<b>NEW CURRICULUM REQUIREMENTS (from Cohort AY2021/22 onwards)</b>	<b>MC</b>
<b>COMMON CURRICULUM REQUIREMENTS – see Annex A</b>	<b>60</b>
Singapore Studies	4
Cultures and Connections	4
Communities and Engagement	4
Critique and Expression	4
Digital Literacy	4
Data Literacy	4
Design Thinking	4
Maker Space	4
Systems Thinking	4
Artificial Intelligence	4
Sustainable Futures	4
Creating Narratives	4
Project Management	4
Integrated Project	8
<b>MAJOR REQUIREMENTS</b>	<b>60</b>
<b>Engineering Core</b>	<b>20</b>
MA1511 Engineering Calculus	2
MA1512 Differential Equations for Engineering	2
MA1513 Linear Algebra with Differential Equations	2
CE2407A Uncertainty analysis for Engineers	2
EG2401A Engineering Professionalism <sup>1</sup>	2
EG3611A Industrial Attachment <sup>2</sup> (or equivalent)	10
<b>Major Programme</b>	<b>40</b>
ESE2101 Env. Sci. and Engr. Principles & Practice	4
ESE2102 Principles & Practice in Environmental Monitoring	4
ESE2000 Chemistry for An Environmentally Sustainable Future	4
ESE2001 Environmental Challenges in the Anthropocene	4
ESE3101 Resource Management and Circular Economy	4
ESE3201 Air Quality in Changing Environment	4
ESE3301 Microbiology in Natural and Built Environment	4
ESE3401 Sustainable Urban Water Technology	4
Technical Electives – see Annex B	8
<b>UNRESTRICTED ELECTIVES</b>	<b>40</b>
<a href="#">Build Your Own Degree</a>	
<b>TOTAL</b>	<b>160</b>

<sup>1</sup> Students enrolled in the Engineering Scholars Programme will read EG2101 Pathways to Engineering Leadership instead.

<sup>2</sup> Engineering students may take up to 20 MCs of credit-bearing internships, of which up to 10 MCs can be used to fulfil the major internship requirement and the remaining will be counted towards Unrestricted Electives. This limit does not apply to students enrolled in the co-op degree programme.

## Annex A: Catalogue of modules in the Common Curriculum

	<b>B.Eng.</b>
<b>Common Curriculum Pillar</b>	<b>Basket of Modules<sup>3</sup></b>
Singapore Studies	Students may read any module from the curated list of modules as approved by the NUS General Education Committee for this pillar.
Cultures and Connections	Students may read any module from the curated list of modules as approved by the NUS General Education Committee for this pillar.
Communities and Engagement	Students may read any module from the curated list of modules as approved by the NUS General Education Committee for this pillar.
Critique and Expression	ES2531 Critical Thinking and Writing
Digital Literacy	CS1010% Programming Methodology (any variant)
Data Literacy	GER1000 Quantitative Reasoning
Design Thinking	DTK1234 Design Thinking
Maker Space	EG1311 Design and Make
Systems Thinking	IE2141 Systems Thinking and Dynamics
Artificial Intelligence	EE2211 Introduction to Machine Learning
Sustainable Futures	EG2501 Liveable Cities
Creating Narratives	To be announced
Project Management	PF1101 Fundamentals of Project Management
Integrated Project	Complete 8 MC from the following list of modules: <ul style="list-style-type: none"> <li>• ESE4502R B. Eng. Dissertation</li> <li>• ESE4501R Design Project</li> <li>• XFE4401 Integrated Honours Project</li> <li>• EG4301 DCP Dissertation<sup>4</sup></li> <li>• EG4301A Ideas to Start-up<sup>4</sup></li> </ul>

<sup>3</sup> The listing of modules is expected to grow and evolve over time, to suit curricular needs.

<sup>4</sup> EG4301 is a 12 MC module that forms part of the Innovation and Design Second Major. Students taking this will fulfil the Integrated Project pillar (8 MCs) and an additional 4 MCs of Unrestricted Electives.

## **Annex B**

<b>List of Technical Elective modules:</b>	
<ul style="list-style-type: none"><li>• ESE3011 Integrated Project for Environmental Sustainability</li><li>• ESE4401 Water and Wastewater Engineering 2</li><li>• ESE4403 Membrane Tech in Env. Applns.</li><li>• ESE4404 Bioenergy</li><li>• ESE4405 Urban Water Engineering and Management</li></ul>	<ul style="list-style-type: none"><li>• ESE4406 Energy Systems and Climate Change Mitigation</li><li>• ESE4408 Env. Impact Assessment</li><li>• ESE5880A Topics in Environmental Engineering: Chem. Lab Safety</li><li>• ESE5880B Climate Change and Urban Ecosystems</li><li>• ESE5880C Environmental System Planning &amp; Analysis</li></ul>