College of Design and Engineering
Bachelor of Engineering (Engineering Science)
Cohort 2023/2024

Course Requirements	Units
COMMON CURRICULUM REQUIREMENTS – *see Annex A*	
• Singapore Studies	4
• Cultures and Connections	4
• Communities and Engagement	4
• Critique and Expression	4
• Digital Literacy	4
• Data Literacy	4
Sub-total for General Education Pillars	24
• Design Thinking	4
• Maker Space	4
• Systems Thinking	4
• Artificial Intelligence	4
• Sustainable Futures	4
• Creating Narratives	4
• Project Management	4
• Integrated Project	8
Sub-total for CDE Common Curriculum requirements	36
MAJOR REQUIREMENTS	
Engineering Core:	
• MA1511 Engineering Calculus	2
• MA1512 Differential Equations for Engineering	2
• MA1508E Linear Algebra for Engineering	4
• EG2401A Engineering Professionalism	2
• EG3611A Industrial Attachment[1] (or equivalent)	10
Sub-total for Engineering Core	20
Major Programme:	
• ESP1111 Engineering Principles in Action	4
• ESP2111 Sensor System Electronics	4
• ESP2106 Principles of Continua	4
• ESP2107 Numerical Methods & Statistics	4
• ESP2110 Design Project 2	4
• ESP3903 Major Design Project 2	4
• ME2121 Engineering Thermodynamics & Heat Transfer	4
• Choose ***ONE*** from the following list:	
– PC2020 Electromagnetics for Electrical Engineers	4
– EE2023 Signals and Systems	
• PC2130B Applied Quantum Physics	4
• PC3235B Applied Solid State Physics	4
Sub-total for Major Programme	40
UNRESTRICTED ELECTIVES	
• Build Your Own Degree	40
Total	160

[1] Engineering students may take up to 20 Units of credit-bearing internships, of which up to 10 Units 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 courses in the Common Curriculum

Common Curriculum Pillar		B.Eng.
		Basket of Courses[2]
General Education Pillars (info)	Singapore Studies	Students may read any course from the curated list of courses as approved by the NUS General Education Committee for this pillar. [GESS%] (Students reading GESS from AY25/26 onwards should read CDE2501 as GESS.)
	Cultures and Connections	Students may read any course from the curated list of courses as approved by the NUS General Education Committee for this pillar. [GEC%]
	Communities and Engagement	Students may read any course from the curated list of courses as approved by the NUS General Education Committee for this pillar. [GEN%]
	Critique and Expression	ES2631 Critique and Communication of Thinking and Design
	Digital Literacy	CS1010% Programming Methodology (any variant)
	Data Literacy	GEA1000 Quantitative Reasoning
CDE common curriculum (info)	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 OR EE2213 Introduction to Artificial Intelligence
	Sustainable Futures#	EG2501 / CDE2501 Liveable Cities
	Creating Narratives#	CDE2000 Creating Narratives
	Project Management	PF1101 Fundamentals of Project Management OR PF1101A Project Management and Finance
	Integrated Project	Complete 8 Unit from the following list of courses: • ESP4901 Research Project • XFE4401 Integrated Honours Project • EG4301/CDE4301 Innovation & Design Capstone[3] • EG4301A/CDE4301A Ideas to Start-up[3]

[2] The listing of courses is expected to grow and evolve over time, to suit curricular needs.
[3] EG4301 is a 12 Unit course that forms part of the Innovation and Design Second Major. Students taking this will fulfil the Integrated Project pillar (8 Units) and an additional 4 Units of Unrestricted Electives.
#Read 1 from each basket (to complete 2, Polytechnic students to complete 1):
Basket A: EE3331C or ME2142 or ME3142
Basket B: EE2023 or PC2020
Basket C: ESP3201A
These courses can be used to replace the Systems Thinking, Sustainable Futures and Creating Narratives Pillars