

**Bachelor of Engineering (Infrastructure & Project Management)
with Minor in Innovation & Design**

Cohort AY2024/2025

Course Requirements	Units
Common Curriculum	
GEA1000 Quantitative Reasoning with Data	4
CS1010E Programming Methodology	4
ES2631 Critique and Communication of Thinking and Design ¹	4
GE: Cultures and Connections ¹	4
GE: Singapore Studies ¹	4
GE: Communities and Engagement ¹	4
CDE2000 Creating Narratives	4
CDE2501 Liveable Cities	4
DTK1234 Design Thinking	4
EE2211 Introduction to Machine Learning	4
EG1311 Design and Make	4
IE2141 Systems Thinking and Dynamics	4
PF1101 Fundamentals of Project Management	4
IPM4101 Dissertation ²	8
Sub-total for Common Curriculum	60
Engineering Core	
MA1511 Engineering Calculus	2
MA1513 Linear Algebra with Differential Equations	2
CE2407A Uncertainty Analysis for Engineers	2
CE2407B Introduction to Numerical Methods for Engineers	2
EG2401A Engineering Professionalism	2
EG3611A Industrial Attachment <u>or</u> CFG2101 NUS Vacation Internship Programme ³ <u>and</u> EG3612 Vacation Industrial Attachment	10
Sub-total for Engineering Core	20
Engineering Programme Requirements	
IPM1102 Infrastructure and Project Management Law	4
IPM1103I Digitalisation in the Built Environment	4
IPM1104 Built Environment Engineering Principles and Practice	
IPM2101 Introduction to Building Performance	4
IPM2102 Construction Technology	4
IPM2103 Measurement (Building Works)	4
IPM2104 Project Cost Management	4
IPM3102 Infrastructure and Facilities Management	4
IPM4102 Project Execution	4
IPM4103 Contract and Procurement Management	4
Sub-total for Engineering Programme Requirements	40
Unrestricted Electives	
Group A course for Minor	4
Group B course for Minor	4
CDE3301 Ideas to Proof-of-Concept (over 2 consecutive semesters)	12
Other unrestricted electives ²	20
Sub-total for Unrestricted Electives	40
Total	160

Innovation & Design Programme
NUS College of Design and Engineering

Notes:

- ¹ Students may read equivalent courses in NUS College (NUSC), University Town College Programme (UTCP), and Ridge View Residential Programme (RVRC).
- ² Students may take CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up in lieu of IPM4101 and 4 units of unrestricted electives.
- ³ May be replaced by CDE2605 Undergraduate Research Opportunities Programme or CDE2605R Undergraduate Research Experience (UREx).

Recommended semester schedule – JC-intake students or equivalent
(for students who opt for vacation internships)

Semester 1	Units	Semester 2	Units
IPM1102 Infrastructure and Project Management Law	4	IPM1103I Digitalisation in the Built Environment	4
IPM1104 Built Environment Engineering Principles and Practice	4	CS1010E Programming Methodology	4
GEA1000 Quantitative Reasoning with Data	4	EG1311 Design & Make	4
DTK1234 Design Thinking	4	MA1511 Engineering Calculus	2
MA1513 Linear Algebra with Differential Equations	2	CE2407B Introduction to Numerical Methods for Engineers	2
CE2407A Uncertainty Analysis for Engineers	2	Group A/B course for Minor	4
Sub-total	20	Sub-total	20

Summer vacation between Semesters 2 and 3	Units
CFG2101 NUS Vacation Internship Programme	4
Sub-total	4

Semester 3	Units	Semester 4	Units
IPM2101 Introduction to Building Performance	4	IPM2103 Measurement (Building Works)	4
IPM2102 Construction Technology	4	IPM2104 Project Cost Management	4
CDE2501 Liveable Cities	4	ES2631 Critique and Communication of Thinking and Design	4
EE2211 Introduction to Machine Learning	4	IE2141 Systems Thinking & Dynamics	4
PF1101 Fundamentals of Project Management	4	CDE3301 Ideas to Proof-of-Concept	6
Group A/B course for Minor	4		
Sub-total	24	Sub-total	22

Summer vacation between Semesters 4 and 5	Units
EG3612 Vacation Internship Attachment	6
Sub-total	6

Semester 5	Units	Semester 6 – can be used for SEP	Units
CDE3301 Ideas to Proof-of-Concept	6	GE	4
IPM3102 Infrastructure and Facilities Management	4	GE	4
CDE2000 Creating Narratives	4	UE	4
EG2401A Engineering Professionalism	2	UE	4
GE	4		
Sub-total	20	Sub-total	16

Semester 7	Units	Semester 8	Units
IPM4101 Dissertation	8	UE	4
IPM4102 Project Execution	4	UE	4
IPM4103 Contract and Procurement Management	4	UE	4
Sub-total	16	Sub-total	12

Recommended semester schedule – JC-intake students or equivalent
(for students who opt for industrial attachment)

Semester 1	Units	Semester 2	Units
IPM1102 Infrastructure and Project Management Law	4	IPM1103I Digitalisation in the Built Environment	4
IPM1104 Built Environment Engineering Principles and Practice	4	CS1010E Programming Methodology	4
GEA1000 Quantitative Reasoning with Data	4	EG1311 Design & Make	4
DTK1234 Design Thinking	4	MA1511 Engineering Calculus	2
MA1513 Linear Algebra with Differential Equations	2	CE2407B Introduction to Numerical Methods for Engineers	2
CE2407A Uncertainty Analysis for Engineers	2	Group A/B course for Minor	4
Sub-total	20	Sub-total	20

Semester 3	Units	Semester 4	Units
IPM2101 Introduction to Building Performance	4	IPM2103 Measurement (Building Works)	4
IPM2102 Construction Technology	4	IPM2104 Project Cost Management	4
CDE2501 Liveable Cities	4	ES2631 Critique and Communication of Thinking and Design	4
EE2211 Introduction to Machine Learning	4	IE2141 Systems Thinking & Dynamics	4
PF1101 Fundamentals of Project Management	4	CDE3301 Ideas to Proof-of-Concept	6
Group A/B course for Minor	4		
Sub-total	24	Sub-total	22

Semester 5	Units	Semester 6	Units
CDE3301 Ideas to Proof-of-Concept	6	EG3611A Industrial Attachment	10
IPM3102 Infrastructure and Facilities Management	4		
CDE2000 Creating Narratives	4		
EG2401A Engineering Professionalism	2		
GE *	4		
Sub-total	20	Sub-total	10

Semester 7	Units	Semester 8	Units
IPM4101 Dissertation	8	UE	4
IPM4102 Project Execution	4	UE	4
IPM4103 Contract and Procurement Management	4	UE	4
GE *	4	UE	4
GE *	4	UE	4
Sub-total	24	Sub-total	20

* Students in UTCP and RVRC will need to overload in Semesters 2 to 4 in order to clear these courses earlier.

Recommended semester schedule – poly-intake students
(for students who are exempted from DTK1234 and EG1311)

Semester 1	Units	Semester 2	Units
IPM1102 Infrastructure and Project Management Law	4	IPM1103I Digitalisation in the Built Environment	4
IPM1104 Built Environment Engineering Principles and Practice	4	CS1010E Programming Methodology	4
GEA1000 Quantitative Reasoning with Data	4	MA1511 Engineering Calculus	2
MA1301 Introductory Mathematics * (UE)	4	CE2407B Introduction to Numerical Methods for Engineers	2
Group A/B course for Minor	4	CDE3301 Ideas to Proof-of-Concept	6
		Group A/B course for Minor	4
Sub-total	20	Sub-total	22

Semester 3	Units	Semester 4	Units
MA1513 Linear Algebra with Differential Equations *	2	IPM2103 Measurement (Building Works)	4
CE2407A Uncertainty Analysis for Engineers *	2	IPM2104 Project Cost Management	4
IPM2101 Introduction to Building Performance	4	ES2631 Critique and Communication of Thinking and Design	4
IPM2102 Construction Technology	4	IE2141 Systems Thinking & Dynamics	4
CDE2501 Liveable Cities	4	GE	4
PF1101 Fundamentals of Project Management	4		
CDE3301 Ideas to Proof-of-Concept	6		
Sub-total	26	Sub-total	20

Semester 5	Units	Semester 6	Units
IPM4101 Dissertation	8	CDE2000 Creating Narratives	4
IPM3102 Infrastructure and Facilities Management	4	EG2401A Engineering Professionalism	2
IPM4102 Project Execution	4	GE	4
IPM4103 Contract and Procurement Management	4	GE	4
EE2211 Introduction to Machine Learning	4		
Sub-total	24	Sub-total	14

* Students who are exempted from MA1301 can take MA1513 and CE2407A in Semester 1.

Poly-intake students with accredited diplomas will receive the following exemptions:

- DTK1234 Design Thinking (4 units)
- EG1311 Design & Make (4 units)
- EG3611A Industrial Attachment (10 units)
- Unrestricted electives (20 units)

Recommended semester schedule – poly-intake students
(for students who are exempted from CDE2000 and PF1101)

Semester 1	Units	Semester 2	Units
IPM1102 Infrastructure and Project Management Law	4	IPM1103I Digitalisation in the Built Environment	4
IPM1104 Built Environment Engineering Principles and Practice	4	CS1010E Programming Methodology	4
GEA1000 Quantitative Reasoning with Data	4	EG1311 Design & Make	4
DTK1234 Design Thinking	4	MA1511 Engineering Calculus	2
MA1301 Introductory Mathematics * (UE)	4	CE2407B Introduction to Numerical Methods for Engineers	2
		Group A/B course for Minor	4
		CDE3301 Ideas to Proof-of-Concept	6
Sub-total	20	Sub-total	26

Semester 3	Units	Semester 4	Units
MA1513 Linear Algebra with Differential Equations *	2	IPM2103 Measurement (Building Works)	4
CE2407A Uncertainty Analysis for Engineers *	2	IPM2104 Project Cost Management	4
IPM2101 Introduction to Building Performance	4	ES2631 Critique and Communication of Thinking and Design	4
IPM2102 Construction Technology	4	IE2141 Systems Thinking & Dynamics	4
CDE2501 Liveable Cities	4	Group A/B course for Minor	4
EE2211 Introduction to Machine Learning	4		
CDE3301 Ideas to Proof-of-Concept	6		
Sub-total	26	Sub-total	20

Semester 5	Units	Semester 6	Units
IPM4101 Dissertation	8	GE	4
IPM3102 Infrastructure and Facilities Management	4	GE	4
IPM4102 Project Execution	4	EG2401A Engineering Professionalism	2
IPM4103 Contract and Procurement Management	4		
GE	4		
Sub-total	24	Sub-total	10

* Students who are exempted from MA1301 can take MA1513 and CE2407A in Semester 1.

Poly-intake students with accredited diplomas will receive the following exemptions:

- CDE2000 Creating Narratives (4 units)
- PF1101 Fundamentals of Project Management (4 units)
- EG3611A Industrial Attachment (10 units)
- Unrestricted electives (20 units)