

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

Cohort AY2025/2026

Course Requirements	Units
Common Curriculum	
GEA1000 Quantitative Reasoning with Data ¹	4
CS1010E Programming Methodology (or other variants) ²	4
CDE2501 Sustainable Systems for Liveable Cities ²	4
ES2631 Critique and Communication of Thinking and Design ²	4
GE: Cultures and Connections ²	4
GE: Communities and Engagement ²	4
DTK1234 Design Thinking	4
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4
EG1311 Design and Make or EG1311BE Design and Make	4
PF1101A Project Management and Finance	4
Sub-total for Common Curriculum	40
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 or CFG2101 NUS Vacation Internship Programme ³ and 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	4
IPM2101 Introduction to Building Performance	4
IPM2102 Construction Technology	4
IPM2103 Measurement (Building Works)	4
IPM2104 Project Cost Management	4
IPM2105 Construction Systems	4
IPM2106 Mechanical and Electrical Systems	4
IPM3102 Infrastructure and Facilities Management	4
IPM3103 Project Finance	4
IPM4102 Project Execution	4
IPM4103 Contract and Procurement Management	4
IPM4101 Dissertation (over 2 consecutive semesters) ⁴	8
Sub-total for Engineering Programme Requirements	60
Unrestricted Electives	
CDE3301 Ideas to Proof-of-Concept (over 2 consecutive semesters) ⁵	12
Electives for Minor ⁵	8
Other unrestricted electives ⁴	20
Sub-total for Unrestricted Electives	40
Total	160

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Notes:

- ¹ Students may read other approved courses for Data Literacy in lieu of GEA1000.
- ² Students may read equivalent courses in NUS College (NUSC), University Town College Programme (UTCP), and Ridge View Residential Programme (RVRC). CDE2501 fulfils GE: Singapore Studies while ES2631 fulfils GE: Critique and Expression.
- ³ May be replaced by CDE2605 Undergraduate Research Opportunities Programme or CDE2605R Undergraduate Research Experience (UREx).
- ⁴ Students may take CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up in lieu of IPM4101 and 4 units of unrestricted electives.
- ⁵ Students should clear at least one elective course prior to CDE3301. Students in competition teams may enrol in CDE3301C Complex Systems Design: From Mission to Prototype in Semester 3 to Semester 4 (Year 2) or Semester 5 to Semester 6 (Year 3).

Sample study plan – 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 and Make <u>or</u> EG1311BE Design and 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	Elective 1 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
IPM2105 Structural Systems	4	IPM2106 Mechanical and Electrical Systems	4
EE2211 Introduction to Machine Learning <u>or</u> EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
PF1101A Project Management and Finance	4	CDE3301 Ideas to Proof-of-Concept	6
Elective 2 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
IPM3103 Project Finance	4	UE	4
CDE2501 Sustainable Systems for Liveable Cities	4	UE	4
EG2401A Engineering Professionalism	2	UE	4
Sub-total	20	Sub-total	20

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

Sample study plan – 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 and Make <u>or</u> EG1311BE Design and 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	Elective 1 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
IPM2105 Structural Systems	4	IPM2106 Mechanical and Electrical Systems	4
EE2211 Introduction to Machine Learning <u>or</u> EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
PF1101A Project Management and Finance	4	CDE3301 Ideas to Proof-of-Concept	6
Elective 2 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		
IPM3103 Project Finance	4		
CDE2501 Sustainable Systems for Liveable Cities	4		
EG2401A Engineering Professionalism	2		
Sub-total	20	Sub-total	10

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

Sample study plan – JC-intake students or equivalent
(for students in Engineering Scholars Programme)

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	IPM2103 Measurement (Building Works)	4
GEA1000 Quantitative Reasoning with Data	4	CE2407B Introduction to Numerical Methods for Engineers	2
DTK1234 Design Thinking	4	RVRC/UTCP course 2 (replaces GE)	4
MA1513 Linear Algebra with Differential Equations	2	Elective 1 for Minor	4
CE2407A Uncertainty Analysis for Engineers	2	CDE3301 Ideas to Proof-of-Concept	6
RVRC/UTCP course 1 (replaces GE)	4		
Sub-total	24	Sub-total	24

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

Semester 3	Units	Semester 4 – can be used for SEP/NOC	Units
IPM2101 Introduction to Building Performance	4	IPM2104 Project Cost Management	4
IPM2102 Construction Technology	4	IPM2106 Mechanical and Electrical Systems	4
IPM2105 Structural Systems	4	EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4
PF1101A Project Management and Finance	4	RVRC/UTCP course 4 (replaces ES2631)	4
RVRC/UTCP course 3 (replaces CDE2501)	4	Elective 2 for Minor	4
CDE3301 Ideas to Proof-of-Concept	6		
Sub-total	26	Sub-total	20

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

Semester 5	Units	Semester 6	Units
IPM4101 Dissertation	4	IPM4101 Dissertation	4
IPM3102 Infrastructure and Facilities Management	4	UE	4
IPM3103 Project Finance	4	UE	4
IPM4102 Project Execution	4	UE	4
IPM4103 Contract and Procurement Management	4	UE	4
EG2401A Engineering Professionalism	2	UE	2
Sub-total	22	Sub-total	22

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Students are highly encouraged to complete the following courses before Semester 1 through advanced placement credits:

- CS1010E Programming Methodology (4 units)
- EG1311 Design and Make (4 units)
- MA1505 Mathematics I (4 units) – replaces MA511 Engineering Calculus (2 units) and counted as UE (2 units)

CFG2101 may be replaced by CDE2605 Undergraduate Research Opportunities Programme or CDE2605R Undergraduate Research Experience (UREx).

Sample study plan – 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
Elective 1 for Minor	4	Elective 2 for Minor	4
		CDE3301 Ideas to Proof-of-Concept	6
Sub-total	20	Sub-total	22

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
IPM2105 Structural Systems	4	IPM2106 Mechanical and Electrical Systems	4
PF1101A Project Management and Finance	4	ES2631 Critique and Communication of Thinking and Design	4
MA1513 Linear Algebra with Differential Equations *	2	EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4
CE2407A Uncertainty Analysis for Engineers *	2		
CDE3301 Ideas to Proof-of-Concept	6		
Sub-total	26	Sub-total	20

Semester 5	Units	Semester 6	Units
IPM4101 Dissertation	4	IPM4101 Dissertation	4
IPM3102 Infrastructure and Facilities Management	4	CDE2501 Sustainable Systems for Liveable Cities	4
IPM3103 Project Finance	4	GE	4
IPM4102 Project Execution	4	GE	4
IPM4103 Contract and Procurement Management	4		
EG2401A Engineering Professionalism	2		
Sub-total	22	Sub-total	16

* 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 and Make (4 units)
- EG3611P Industrial Attachment (10 units)
- Unrestricted electives (20 units)

Sample study plan – poly-intake students
(for students who are exempted from PF1101A)

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 and Make or EG1311BE Design and Make	4
DTK1234 Design Thinking	4	MA1511 Engineering Calculus	2
MA1301 Introductory Mathematics * (UE)	4	CE2407B Introduction to Numerical Methods for Engineers	2
		Elective 1 for Minor	4
		CDE3301 Ideas to Proof-of-Concept	6
Sub-total	20	Sub-total	26

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
IPM2105 Structural Systems	4	IPM2106 Mechanical and Electrical Systems	4
MA1513 Linear Algebra with Differential Equations *	2	ES2631 Critique and Communication of Thinking and Design	4
CE2407A Uncertainty Analysis for Engineers *	2	EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4
CDE3301 Ideas to Proof-of-Concept	6	Elective 2 for Minor	4
Sub-total	22	Sub-total	24

Semester 5	Units	Semester 6	Units
IPM4101 Dissertation	4	IPM4101 Dissertation	4
IPM3102 Infrastructure and Facilities Management	4	CDE2501 Sustainable Systems for Liveable Cities	4
IPM3103 Project Finance	4	GE	4
IPM4102 Project Execution	4	GE	4
IPM4103 Contract and Procurement Management	4		
EG2401A Engineering Professionalism	2		
Sub-total	22	Sub-total	16

* 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:

- PF1101A Project Management and Finance (4 units)
- EG3611P Industrial Attachment (10 units)
- Unrestricted electives (20 units)