Innovation & Design Programme
NUS College of Design and Engineering

Bachelor of Engineering (Infrastructure & Project Management) with Second Major in Innovation & Design

Cohort AY2022/2023

Modular Requirements	Modular Credits (MCs)
Common Curriculum	
GEA1000 Quantitative Reasoning with Data [1]	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
DTK1234 Design Thinking	4
EE2211 Introduction to Machine Learning	4
EG1311 Design and Make	4
EG2501 Liveable Cities	4
IE2141 Systems Thinking and Dynamics	4
PF1101 Fundamentals of Project Management	4
EG4301 DCP Dissertation or EG4301A Ideas to Start-up (over 2 consecutive semesters) [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 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
IPM1103 Digital Construction	4
IPM2101 Introduction to Building Performance	4
IPM2102 Construction Technology	4
IPM2103 Measurement (Building Works)	4
IPM2104 Project Cost Management	4
IPM3101 Project Feasibility	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 module for Second Major	4
Group B module for Second Major	4
Group C modules for Second Major	8
EG3301R DCP Project (over 2 consecutive semesters)	12
EG4301 DCP Dissertation or EG4301A Ideas to Start-up (over 2 consecutive semesters) [2]	4

(updated 17 June 2022)

Other unrestricted electives	8
Sub-total for Unrestricted Electives	**40**
Total	**160**

Notes:

[1] Students may read equivalent modules in USP/NUSC, UTCP, and RVRC.

[2] The 12 MCs for EG4301/EG4301A are counted towards 8 MCs for the Integrated Project requirement in the Common Curriculum while 4 MCs are counted as unrestricted elective.

[3] May be replaced by EG2605 Undergraduate Research Opportunities Programme.

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

Semester 1	MCs	Semester 2	MCs
IPM1102 Infrastructure and Project Management Law	4	IPM1103 Digital Construction	4
GEA1000 Quantitative Reasoning with Data	4	CS1010E Programming Methodology	4
DTK1234 Design Thinking	4	EG1311 Design & Make	4
MA1513 Linear Algebra with Differential Equations	2	MA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for Engineers	2	CE2407B Introduction to Numerical Methods for Engineers	2
PF1101 Fundamentals of Project Management	4	Group A module for Second Major	4
Sub-total	**20**	**Sub-total**	**20**

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

Semester 3	MCs	Semester 4	MCs
IPM2101 Introduction to Building Performance	4	IPM2103 Measurement (Building Works)	4
IPM2102 Construction Technology	4	IPM2104 Project Cost Management	4
EE2211 Introduction to Machine Learning	4	ES2631 Critique and Communication of Thinking and Design	4
EG2501 Liveable Cities	4	IE2141 Systems Thinking & Dynamics	4
Group B module for Second Major	4	EG3301R DCP Project	6
Sub-total	**20**	**Sub-total**	**22**

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

Semester 5	MCs	Semester 6 – can be used for SEP	MCs
EG3301R DCP Project	6	Innovation & Enterprise Elective 1	4
IPM3101 Project Feasibility	4	Innovation & Enterprise Elective 2	4
IPM3102 Infrastructure and Facilities Management	4	GE *	4
CDE2000 Creating Narratives	4	GE *	4
EG2401A Engineering Professionalism	2	GE *	4
Sub-total	**20**	**Sub-total**	**20**

Semester 7	MCs	Semester 8	MCs
EG4301 DCP Dissertation	6	EG4301 DCP Dissertation	6
IPM4102 Project Execution	4	UE	4
IPM4103 Contract and Procurement Management	4		
UE	4		
Sub-total	**18**	**Sub-total**	**10**

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

(updated 17 June 2022)

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

Semester 1	MCs	Semester 2	MCs
IPM1102 Infrastructure and Project Management Law	4	IPM1103 Digital Construction	4
GEA1000 Quantitative Reasoning with Data	4	CS1010E Programming Methodology	4
DTK1234 Design Thinking	4	EG1311 Design & Make	4
MA1513 Linear Algebra with Differential Equations	2	MA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for Engineers	2	CE2407B Introduction to Numerical Methods for Engineers	2
PF1101 Fundamentals of Project Management	4	Group A module for Second Major	4
Sub-total	**20**	**Sub-total**	**20**

Semester 3	MCs	Semester 4	MCs
IPM2101 Introduction to Building Performance	4	IPM2103 Measurement (Building Works)	4
IPM2102 Construction Technology	4	IPM2104 Project Cost Management	4
EE2211 Introduction to Machine Learning	4	ES2631 Critique and Communication of Thinking and Design	4
EG2501 Liveable Cities	4	IE2141 Systems Thinking & Dynamics	4
Group B module for Second Major	4	EG3301R DCP Project	6
GE	4		
Sub-total	**24**	**Sub-total**	**22**

Semester 5	MCs	Semester 6	MCs
EG3301R DCP Project	6	EG3611A Industrial Attachment	10
IPM3101 Project Feasibility	4		
IPM3102 Infrastructure and Facilities Management	4		
CDE2000 Creating Narratives	4		
EG2401A Engineering Professionalism	2		
Sub-total	**20**	**Sub-total**	**10**

Semester 7	MCs	Semester 8	MCs
EG4301 DCP Dissertation	6	EG4301 DCP Dissertation	6
IPM4102 Project Execution	4	Innovation & Enterprise Elective 1	4
IPM4103 Contract and Procurement Management	4	Innovation & Enterprise Elective 2	4
GE *	4	UE	4
GE *	4	UE	4
Sub-total	**22**	**Sub-total**	**22**

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

(updated 17 June 2022)

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Recommended semester schedule – JC-intake students or equivalent
(for students in year-long NOC programmes)

Semester 1	MCs	Semester 2	MCs
IPM1102 Infrastructure and Project Management Law	4	IPM1103 Digital Construction	4
GEA1000 Quantitative Reasoning with Data	4	CS1010E Programming Methodology	4
DTK1234 Design Thinking	4	EG1311 Design & Make	4
MA1513 Linear Algebra with Differential Equations	2	MA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for Engineers	2	CE2407B Introduction to Numerical Methods for Engineers	2
PF1101 Fundamentals of Project Management	4	Group A module for Second Major	4
Sub-total	**20**	**Sub-total**	**20**

Semester 3	MCs	Semester 4	MCs
IPM2101 Introduction to Building Performance	4	IPM2103 Measurement (Building Works)	4
IPM2102 Construction Technology	4	IPM2104 Project Cost Management	4
EE2211 Introduction to Machine Learning	4	ES2631 Critique and Communication of Thinking and Design	4
EG2501 Liveable Cities	4	IE2141 Systems Thinking & Dynamics	4
Group B module for Second Major	4	EG3301R DCP Project	6
GE	4		
Sub-total	**24**	**Sub-total**	**22**

Semester 5 – NOC	MCs	Semester 6 – NOC	MCs
EG3301R DCP Project	6	NOC	
IPM3101 Project Feasibility	4		
IPM3102 Infrastructure and Facilities Management	4		
IPM4102 Project Execution	4		
IPM4103 Contract and Procurement Management	4		
Sub-total	**22**	**Sub-total**	**20**

Semester 7 – NOC	MCs	Semester 8	MCs
NOC		CDE2000 Creating Narratives	4
		GE *	4
		GE *	4
Sub-total	**20**	**Sub-total**	**12**

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

A year-long NOC programme comprises the following modules:

- TR3201N Entrepreneurship Practicum (8 MCs) – replaces EG4301A (4 MCs out of 12 MCs) and UE (4 MCs)
- TR3202N Start-up Internship Programme (12 MCs) – replaces EG3611A (10 MCs) and EG2401A (2 MCs)
- TR3203N Start-up Case Study and Analysis (8 MCs) – replaces EG4301A (8 MCs out of 12 MCs)
- Entrepreneurship courses (up to 12 MCs) – replaces Innovation & Enterprise electives (up to 8 MCs) while the rest are counted as UE

(updated 17 June 2022)

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Recommended semester schedule – JC-intake students or equivalent
(for students in one-semester NOC programmes)

Semester 1	MCs	Semester 2	MCs
IPM1102 Infrastructure and Project Management Law	4	IPM1103 Digital Construction	4
GEA1000 Quantitative Reasoning with Data	4	CS1010E Programming Methodology	4
DTK1234 Design Thinking	4	EG1311 Design & Make	4
MA1513 Linear Algebra with Differential Equations	2	MA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for Engineers	2	CE2407B Introduction to Numerical Methods for Engineers	2
PF1101 Fundamentals of Project Management	4	Group A module for Second Major	4
Sub-total	**20**	**Sub-total**	**20**

Semester 3	MCs	Semester 4	MCs
IPM2101 Introduction to Building Performance	4	IPM2103 Measurement (Building Works)	4
IPM2102 Construction Technology	4	IPM2104 Project Cost Management	4
EE2211 Introduction to Machine Learning	4	ES2631 Critique and Communication of Thinking and Design	4
EG2501 Liveable Cities	4	IE2141 Systems Thinking & Dynamics	4
Group B module for Second Major	4	EG3301R DCP Project	6
GE	4		
Sub-total	**24**	**Sub-total**	**22**

Semester 5	MCs	Semester 6 – NOC	MCs
EG3301R DCP Project	6	NOC	
IPM3101 Project Feasibility	4		
IPM3102 Infrastructure and Facilities Management	4		
CDE2000 Creating Narratives	4		
Sub-total	**18**	**Sub-total**	**20**

Semester 7	MCs	Semester 8	MCs
EG4301 DCP Dissertation	6	EG4301 DCP Dissertation	6
IPM4102 Project Execution	4	GE *	4
IPM4103 Contract and Procurement Management	4	UE	4
GE *	4	UE	4
Sub-total	**18**	**Sub-total**	**18**

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

A one-semester NOC programme comprises the following modules:

- TR3202S Start-up Internship Programme (12 MCs) – replaces EG3611A (10 MCs) and EG2401A (2 MCs)
- TR3204 Entrepreneurship Practicum (4 MCs) – replaces Innovation & Enterprise Elective 1
- Entrepreneurship course (4 MCs) – replaces Innovation & Enterprise Elective 2

(updated 17 June 2022)