NUS Innovation & Design Programme
College of Design and Engineering

Bachelor of Engineering (Robotics & Machine Intelligence) with Second Major in Innovation & Design

Cohort AY2025/2026

Course Requirements	Units
Common Curriculum	
GEA1000 Quantitative Reasoning with Data [1]	4
CS1010E Programming Methodology (or other variants)	4
CDE2501 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
MA1512 Differential Equations for Engineering	2
MA1513 Linear Algebra with Differential Equations	2
CE2407A Uncertainty Analysis of 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	
RB1101 Fundamentals of Robotics I	4
RB2101 Fundamentals of Robotics II	4
RB2202 Kinematics and Dynamics for Robots	4
RB2203 Robot Control	4
RB2301 Robot Programming	4
RB2302 Fundamentals of Artificial Neural Networks	4
RB3301 Introduction to Machine Intelligence	4
RB3302 Planning and Navigation	4
RB3303 Robotic System Design and Application	4
Technical electives	16
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up (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
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up (over 2 consecutive semesters) [4]	4
Electives for Second Major [5]	16
Other unrestricted electives	8
Sub-total for Unrestricted Electives	**40**
Total	**160**

(updated 23 May 2025)

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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] The 12 units for CDE4301/CDE4301A are counted towards 8 units for Integrated Project while 4 units are counted as unrestricted elective.

[5] Students should clear at least one elective course from List I prior to CDE3301.

(updated 23 May 2025)

NUS Innovation & Design Programme
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Recommended semester schedule – JC-intake students or equivalent

(for students who opt for vacation internships)

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	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
CE2407A Uncertainty Analysis of Engineers	2	MA1512 Differential Equations for Engineering	2
MA1511 Engineering Calculus	2	MA1513 Linear Algebra with Differential Equations	2
GE	4	PF1101A Project Management and Finance	4
		Elective 1 for Second Major (from List I)	4
Sub-total	**20**	**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	Units
RB2202 Kinematics and Dynamics for Robots	4	RB2203 Robot Control	4
RB2301 Robot Programming	4	RB2302 Fundamentals of Artificial Neural Networks	4
RB3302 Planning and Navigation	4	CDE2501 Liveable Cities	4
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
Elective 2 for Second Major (from List I)	4	CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**20**	**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	Elective 3 for Second Major	4
Technical Elective 1	4	RB3301 Introduction to Machine Intelligence	4
EG2401A Engineering Professionalism	2	RB3303 Robotic System Design and Application	4
GE	4	Technical Elective 2	4
UE	4	UE	4
Sub-total	**20**	**Sub-total**	**20**

Semester 7	Units	Semester 8	Units
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6	CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6
Elective 4 for Second Major	4	Technical Elective 4	4
Technical Elective 3	4		
Sub-total	**14**	**Sub-total**	**10**

(updated 23 May 2025)

NUS Innovation & Design Programme
College of Design and Engineering

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

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	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
CE2407A Uncertainty Analysis of Engineers	2	MA1512 Differential Equations for Engineering	2
MA1511 Engineering Calculus	2	MA1513 Linear Algebra with Differential Equations	2
GE	4	PF1101A Project Management and Finance	4
		Elective 1 for Second Major (from List I)	4
Sub-total	**20**	**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	Units
RB2202 Kinematics and Dynamics for Robots	4	RB2203 Robot Control	4
RB2301 Robot Programming	4	RB2302 Fundamentals of Artificial Neural Networks	4
RB3302 Planning and Navigation	4	CDE2501 Liveable Cities	4
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
Elective 2 for Second Major (from List I)	4	CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**20**	**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	Elective 3 for Second Major	4
Specialisation course 1	4	RB3301 Introduction to Machine Intelligence	4
EG2401A Engineering Professionalism	2	RB3303 Robotic System Design and Application	4
GE	4	Specialisation course 2	4
UE	4	Specialisation course 3	4
Sub-total	**20**	**Sub-total**	**20**

Semester 7	Units	Semester 8	Units
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6	CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6
Elective 4 for Second Major	4	Specialisation course 5	4
Specialisation course 4	4		
Sub-total	**14**	**Sub-total**	**10**

(updated 23 May 2025)

NUS Innovation & Design Programme
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Recommended semester schedule – JC-intake students or equivalent

(for students who opt for industrial attachment)

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	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
CE2407A Uncertainty Analysis of Engineers	2	MA1512 Differential Equations for Engineering	2
MA1511 Engineering Calculus	2	MA1513 Linear Algebra with Differential Equations	2
GE	4	PF1101A Project Management and Finance	4
		Elective 1 for Second Major (from List I)	4
Sub-total	**20**	**Sub-total**	**24**

Semester 3	Units	Semester 4	Units
RB2202 Kinematics and Dynamics for Robots	4	RB2203 Robot Control	4
RB2301 Robot Programming	4	RB2302 Fundamentals of Artificial Neural Networks	4
RB3302 Planning and Navigation	4	CDE2501 Liveable Cities	4
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
Elective 2 for Second Major (from List I)	4	CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**20**	**Sub-total**	**22**

Semester 5	Units	Semester 6	Units
CDE3301 Ideas to Proof-of-Concept	6	EG3611A Industrial Attachment	10
RB3301 Introduction to Machine Intelligence	4		
RB3303 Robotic System Design and Application	4		
EG2401A Engineering Professionalism	2		
GE	4		
Sub-total	**20**	**Sub-total**	**10**

Semester 7	Units	Semester 8	Units
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6	CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6
Elective 3 for Second Major	4	Elective 4 for Second Major	4
Technical Elective 1	4	Technical Elective 3	4
Technical Elective 2	4	Technical Elective 4	4
UE	4	UE	4
Sub-total	**22**	**Sub-total**	**22**

(updated 23 May 2025)

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

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	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
CE2407A Uncertainty Analysis of Engineers	2	MA1512 Differential Equations for Engineering	2
MA1511 Engineering Calculus	2	MA1513 Linear Algebra with Differential Equations	2
GE	4	PF1101A Project Management and Finance	4
		Elective 1 for Second Major (from List I)	4
Sub-total	**20**	**Sub-total**	**24**

Semester 3	Units	Semester 4	Units
RB2202 Kinematics and Dynamics for Robots	4	RB2203 Robot Control	4
RB2301 Robot Programming	4	RB2302 Fundamentals of Artificial Neural Networks	4
RB3302 Planning and Navigation	4	CDE2501 Liveable Cities	4
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
Elective 2 for Second Major (from List I)	4	CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**20**	**Sub-total**	**22**

Semester 5	Units	Semester 6	Units
CDE3301 Ideas to Proof-of-Concept	6	EG3611A Industrial Attachment	10
RB3301 Introduction to Machine Intelligence	4		
RB3303 Robotic System Design and Application	4		
EG2401A Engineering Professionalism	2		
GE	4		
Sub-total	**20**	**Sub-total**	**10**

Semester 7	Units	Semester 8	Units
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6	CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6
Elective 3 for Second Major	4	Elective 4 for Second Major	4
Specialisation course 1	4	Specialisation course 4	4
Specialisation course 2	4	Specialisation course 5	4
Specialisation course 3	4	UE	4
Sub-total	**22**	**Sub-total**	**22**

(updated 23 May 2025)

NUS Innovation & Design Programme
College of Design and Engineering

Recommended semester schedule – JC-intake students or equivalent

(for students in year-long NOC programmes)

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	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
CE2407A Uncertainty Analysis of Engineers	2	MA1512 Differential Equations for Engineering	2
MA1511 Engineering Calculus	2	MA1513 Linear Algebra with Differential Equations	2
GE	4	PF1101A Project Management and Finance	4
		Elective 1 for Second Major (from List I)	4
Sub-total	**20**	**Sub-total**	**24**

Semester 3	Units	Semester 4	Units
RB2202 Kinematics and Dynamics for Robots	4	RB2203 Robot Control	4
RB2301 Robot Programming	4	RB2302 Fundamentals of Artificial Neural Networks	4
RB3302 Planning and Navigation	4	CDE2501 Liveable Cities	4
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
Elective 2 for Second Major (from List I)	4	CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**20**	**Sub-total**	**22**

Semester 5	Units	Semester 6 – NOC	Units
CDE3301 Ideas to Proof-of-Concept	6	NOC	
RB3301 Introduction to Machine Intelligence	4		
RB3303 Robotic System Design and Application	4		
GE	4		
Sub-total	**18**	**Sub-total**	**20**

Semester 7 – NOC	Units	Semester 8	Units
NOC		Technical Elective 1	4
		Technical Elective 2	4
		Technical Elective 3	4
		Technical Elective 4	4
Sub-total	**20**	**Sub-total**	**16**

(updated 23 May 2025)

NUS Innovation & Design Programme
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A year-long NOC programme comprises the following courses (up to 40 units):

- ETP3206L Innovation & Enterprise Internship (16 units) – replaces EG3611A (10 units), EG2401A (2 units), and UE (4 units)
- ETP3202L Innovation & Enterprise Case Study & Analysis (8 units) – replaces CDE4301A (8 units out of 12 units)
- ETP3203L Innovation & Enterprise Internship Practicum (8 units) – replaces CDE4301A (4 units out of 12 units) and UE (4 units)
- Entrepreneurship courses (up to 8 units) – replaces Electives 3 and 4 for Second Major (students will need to complete Electives 3 and/or 4 for Second Major in NUS if they are unable to complete 8 units of entrepreneurship courses during NOC)

(updated 23 May 2025)

NUS Innovation & Design Programme
College of Design and Engineering

Recommended semester schedule – JC-intake students or equivalent

(for students in one-semester NOC programmes)

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	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
CE2407A Uncertainty Analysis of Engineers	2	MA1512 Differential Equations for Engineering	2
MA1511 Engineering Calculus	2	MA1513 Linear Algebra with Differential Equations	2
GE	4	PF1101A Project Management and Finance	4
		Elective 1 for Second Major (from List I)	4
Sub-total	**20**	**Sub-total**	**24**

Semester 3	Units	Semester 4	Units
RB2202 Kinematics and Dynamics for Robots	4	RB2203 Robot Control	4
RB2301 Robot Programming	4	RB2302 Fundamentals of Artificial Neural Networks	4
RB3302 Planning and Navigation	4	CDE2501 Liveable Cities	4
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
Elective 2 for Second Major (from List I)	4	CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**20**	**Sub-total**	**22**

Semester 5	Units	Semester 6 – NOC	Units
CDE3301 Ideas to Proof-of-Concept	6	NOC	
RB3301 Introduction to Machine Intelligence	4		
RB3303 Robotic System Design and Application	4		
GE	4		
Sub-total	**18**	**Sub-total**	**20**

Semester 7	Units	Semester 8	Units
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6	CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6
Technical Elective 1	4	Technical Elective 3	4
Technical Elective 2	4	Technical Elective 4	4
UE	4	UE	4
Sub-total	**18**	**Sub-total**	**18**

A one-semester NOC programme comprises the following courses (up to 20 units):

- ETP3201S Innovation & Enterprise Internship (12 units) – replaces EG3611A (10 units) and EG2401A (2 units)
- ETP3204S Innovation & Enterprise Internship Practicum (Short) (4 units) – replaces Elective 3 for Second Major (4 units)
- Entrepreneurship course (4 units) – replaces Elective 4 for Second Major (4 units)

(updated 23 May 2025)

NUS Innovation & Design Programme
College of Design and Engineering

Recommended semester schedule – JC-intake students or equivalent

(for students in Engineering Scholars Programme who plan to go for SEP)

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	4
CE2407A Uncertainty Analysis of Engineers	2	GEA1000 Quantitative Reasoning with Data	4
RVRC/UTCP course 1 (replaces GE)	4	DTK1234 Design Thinking	4
Elective 1 for Second Major (from List I)	4	MA1512 Differential Equations for Engineering	2
UE	4	MA1513 Linear Algebra with Differential Equations	2
UE	2	RVRC/UTCP course 2 (replaces GE)	4
PF1101A Project Management and Finance	4	CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**24**	**Sub-total**	**26**

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	Units
RB2202 Kinematics and Dynamics for Robots	4	RB2203 Robot Control	4
RB2301 Robot Programming	4	RB2302 Fundamentals of Artificial Neural Networks	4
RB3302 Planning and Navigation	4	EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4
RVRC/UTCP course 3 (replaces CDE2501)	4	RVRC/UTCP course 4 (replaces ES2631)	4
Elective 2 for Second Major (from List I)	4	Elective 3 for Second Major	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
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6	CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6
Elective 4 for Second Major	4	RB3301 Introduction to Machine Intelligence	4
Technical Elective 1	4	RB3303 Robotic System Design and Application	4
Technical Elective 2	4	Technical Elective 3	4
EG2401A Engineering Professionalism	2	Technical Elective 4	4
Sub-total	**20**	**Sub-total**	**22**

(updated 23 May 2025)

NUS Innovation & Design Programme
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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 MA1511 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).

(updated 23 May 2025)

NUS Innovation & Design Programme
College of Design and Engineering

Recommended semester schedule – JC-intake students or equivalent
(for students in Engineering Scholars Programme who plan to go for one-semester NOC programmes)

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	4
CE2407A Uncertainty Analysis of Engineers	2	GEA1000 Quantitative Reasoning with Data	4
RVRC/UTCP course 1 (replaces GE)	4	DTK1234 Design Thinking	4
Elective 1 for Second Major (from List I)	4	MA1512 Differential Equations for Engineering	2
UE	4	MA1513 Linear Algebra with Differential Equations	2
UE	2	RVRC/UTCP course 2 (replaces GE)	4
PF1101A Project Management and Finance	4	CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**24**	**Sub-total**	**26**

Semester 3	Units	Semester 4 – NOC	Units
RB2202 Kinematics and Dynamics for Robots	4		
RB2301 Robot Programming	4		
RB3302 Planning and Navigation	4		
RVRC/UTCP course 3 (replaces CDE2501)	4		
Elective 2 for Second Major (from List I)	4		
CDE3301 Ideas to Proof-of-Concept	6		
Sub-total	**26**	**Sub-total**	**20**

Semester 5	Units	Semester 6	Units
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6	CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4	RB2203 Robot Control	4
Technical Elective 1	4	RB2302 Fundamentals of Artificial Neural Networks	4
Technical Elective 2	4	RB3301 Introduction to Machine Intelligence	4
Technical Elective 3	4	RB3303 Robotic System Design and Application	4
RVRC/UTCP course 4 (replaces ES2631)	4	Technical Elective 4	4
Sub-total	**26**	**Sub-total**	**26**

(updated 23 May 2025)

NUS Innovation & Design Programme
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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 MA1511 Engineering Calculus (2 units) and counted as UE (2 units)

A one-semester NOC programme comprises the following courses (up to 20 units):

- ETP3201S Innovation & Enterprise Internship (12 units) – replaces EG3611A (10 units) and EG2401A (2 units)
- ETP3204S Innovation & Enterprise Internship Practicum (Short) (4 units) – replaces Elective 3 for Second Major (4 units)
- Entrepreneurship course (4 units) – replaces Elective 4 for Second Major (4 units)

(updated 23 May 2025)

NUS Innovation & Design Programme
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Recommended semester schedule – poly-intake students

Semester 1	Units	Semester 2	Units
RB1101 Fundamentals of Robotics I	4	RB2101 Fundamentals of Robotics II	4
CS1010E Programming Methodology	4	RB2302 Fundamentals of Artificial Neural Networks	4
MA1301 Introductory Mathematics * (UE)	4	GEA1000 Quantitative Reasoning with Data	4
ES2631 Critique and Communication of Thinking and Design	4	MA1512 Differential Equations for Engineering	2
Elective 1 for Second Major (from List I)	4	MA1513 Linear Algebra with Differential Equations	2
		PF1101A Project Management and Finance	4
		CDE3301 Ideas to Proof-of-Concept	6
Sub-total	**20**	**Sub-total**	**26**

Semester 3	Units	Semester 4	Units
RB2202 Kinematics and Dynamics for Robots	4	RB2203 Robot Control	4
RB2301 Robot Programming	4	RB3301 Introduction to Machine Intelligence	4
RB3302 Planning and Navigation	4	CDE2501 Liveable Cities	4
CE2407A Uncertainty Analysis of Engineers *	2	EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4
MA1511 Engineering Calculus *	2	EG2401A Engineering Professionalism	2
Elective 2 for Second Major (from List I)	4	GE	4
CDE3301 Ideas to Proof-of-Concept	6		
Sub-total	**26**	**Sub-total**	**22**

Semester 5	Units	Semester 6	Units
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6	CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	6
Elective 3 for Second Major	4	Elective 4 for Second Major	4
Technical Elective 1	4	RB3303 Robotic System Design and Application	4
Technical Elective 2	4	Technical Elective 3	4
GE	4	Technical Elective 4	4
Sub-total	**22**	**Sub-total**	**22**

* Students who are exempted from MA1301 can take CE2407A and MA1511 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)

(updated 23 May 2025)