Bachelor of Engineering (Biomedical Engineering) 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	4
or EE2213 Introduction to Artificial Intelligence	
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 <u>or</u>	10
CFG2101 NUS Vacation Internship Programme ³ and EG3612 Vacation Industrial	
Attachment	
Sub-total for Engineering Core	20
Engineering Programme Requirements	
BN1112 Introduction to Biomedical Design and Manufacturing	4
BN2112 Cell Biology and Analytics for Engineers	4
BN2104 Quantitative Approaches to Public and Global Health	4
BN2105 Medical Device Life Cycle Management	4
BN2201 Quantitative Physiology for Bioengineers	4
BN2204 Fundamentals of Biomechanics	4
BN2301 Biochemistry and Biomaterials for Bioengineers	4
BN2404 Biomedical Circuits and Signal Processing	4
BN3405 Biomedical Instrumentation	4
BN3406 Bioimaging and Al Applications	4
Technical electives	8
CDE3301 Ideas to Proof-of-Concept (over 2 consecutive semesters) ⁴	4
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	8
(over 2 consecutive semesters) ⁵	, and the second
Sub-total for Engineering Programme Requirements	60
Unrestricted Electives	30
CDE3301 Ideas to Proof-of-Concept (over 2 consecutive semesters) ⁴	8
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up	4
(over 2 consecutive semesters) ⁵	
(over 2 consecutive semesters) ⁵ Flectives for Second Major ⁶	16
Electives for Second Major ⁶	16 12
	16 12 40

Notes:

- ¹ Students may read other approved courses for Data Literacy in lieu of GEA1000.
- 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.
- May be replaced by CDE2605 Undergraduate Research Opportunities Programme or CDE2605R Undergraduate Research Experience (UREx).
- ⁴ The 12 units for CDE3301 are counted towards 4 units for BN3101A Biomedical Engineering Design while 8 units are counted as unrestricted elective.
- ⁵ The 12 units for CDE4301/CDE4301A are counted towards 8 units for Integrated Project while 4 units are counted as unrestricted elective.
- ⁶ Students should clear at least one elective course from List I prior to CDE3301.

Recommended semester schedule – JC-intake students or equivalent

(for students who opt for vacation internships)

Semester 1	Units	Semester 2	Units
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4
Design and Manufacturing	4	Engineers	4
GEA1000 Quantitative Reasoning with	4	CC1010F Programming Mathedalogy	4
Data	4	CS1010E Programming Methodology	4
DTI/1224 Design Thinking	4	EG1311 Design and Make	4
DTK1234 Design Thinking	4	or EG1311BE Design and Make	4
MA1513 Linear Algebra with Differential	2	MAAIF11 Engineering Coloulus	2
Equations	2	MA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for	2	CE2407B Introduction to Numerical	2
Engineers	2	Methods for Engineers	2
PF1101A Project Management and	4	Floating 1 for Cooped Major (from List I)	4
Finance	4	Elective 1 for Second Major (from List I)	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
BN2104 Quantitative Approaches to	4	BN2204 Fundamentals of Biomechanics	4
Public and Global Health	-	BIV2204 Furndamentals of Biomeenames	-
BN2105 Medical Device Life Cycle	4	BN3405 Biomedical Instrumentation	4
Management	4	BN3403 Bioinedical instrumentation	4
BN2301 Biochemistry & Biomaterials for	4	BN3406 Bioimaging and Al Applications	4
Bioengineers	4	BN3400 Biolinaging and Al Applications	4
BN2404 Biomedical Circuits and Signal	4	ES2631 Critique and Communication of	4
Processing	4	Thinking and Design	4
EE2211 Introduction to Machine		CDE3301 Ideas to Proof-of-Concept	
Learning or EE2213 Introduction to	4	(replaces BN3101A)	6
Artificial Intelligence		(Teplaces BNS101A)	
EG2401A Engineering Professionalism	2		
Sub-total	22	Sub-total Sub-total	22

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

Semester 5	Units	Semester 6 – can be used for SEP	Units
BN2201 Quantitative Physiology for	4	GE	4
Bioengineers	4	GE .	4
CDE2501 Liveable Cities	4	GE	4
Elective 2 for Second Major (from List I)	4	UE	4
CDE3301 Ideas to Proof-of-Concept	6	UE	4
(replaces BN3101A)	D	UE .	4
		UE	4
Sub-total Sub-total	18	Sub-total	20

Semester 7	Units	Semester 8	Units
CDE4301 Innovation & Design Capstone	6	CDE4301 Innovation & Design Capstone	6
or CDE4301A Ideas to Start-up	O	or CDE4301A Ideas to Start-up	0
Elective 3 for Second Major	4	Elective 4 for Second Major	4
Technical Elective 1	4	Technical Elective 2	4
Sub-total	14	Sub-total	14

Recommended semester schedule – JC-intake students or equivalent

(for students who opt for vacation internships plus a specialisation)

Semester 1	Units	Semester 2	Units	
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4	
Design and Manufacturing	4	Engineers	4	
GEA1000 Quantitative Reasoning with	4	CC1010E Dragramming Mathadalagu	4	
Data	4	CS1010E Programming Methodology	4	
DTK1224 Design Thinking	4	EG1311 Design and Make	4	
DTK1234 Design Thinking	4	or EG1311BE Design and Make	4	
MA1513 Linear Algebra with Differential	2	NAA1511 Franks andre Calaulus	2	
Equations	2	2	MA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for	2	CE2407B Introduction to Numerical	2	
Engineers	2	Methods for Engineers	2	
PF1101A Project Management and	4	Floating 1 for Cooped Major (from List I)	4	
Finance	4	Elective 1 for Second Major (from List I)	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
BN2104 Quantitative Approaches to	4	BN2204 Fundamentals of Biomechanics	4
Public and Global Health	•	BN22011 and americals of Biomeeriames	·
BN2105 Medical Device Life Cycle	4	BN3405 Biomedical Instrumentation	4
Management	4	BN3403 Bioinedical Histiatheritation	4
BN2301 Biochemistry & Biomaterials for	4	BN3406 Bioimaging and Al Applications	4
Bioengineers	4	BN3400 Biolinaging and Al Applications	4
BN2404 Biomedical Circuits and Signal	4	ES2631 Critique and Communication of	4
Processing	4	Thinking and Design	4
EE2211 Introduction to Machine		CDE3301 Ideas to Proof-of-Concept	
Learning or EE2213 Introduction to	4	(replaces BN3101A)	6
Artificial Intelligence		(Teplaces BNSIUIA)	
EG2401A Engineering Professionalism	2		
Sub-total	22	Sub-total 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
BN2201 Quantitative Physiology for	4	GE	4
Bioengineers	4	GE	4
CDE2501 Liveable Cities	4	GE	4
Elective 2 for Second Major (from List I)	4	Specialisation course 1	4
CDE3301 Ideas to Proof-of-Concept	6	Specialization course 2	4
(replaces BN3101A)	O	Specialisation course 2	4
		Specialisation course 3	4
Sub-total	18	Sub-total Sub-total	20

Semester 7	Units	Semester 8	Units
CDE4301 Innovation & Design Capstone	6	CDE4301 Innovation & Design Capstone	6
or CDE4301A Ideas to Start-up	O	or CDE4301A Ideas to Start-up	0
Elective 3 for Second Major	4	Elective 4 for Second Major	4
Specialisation course 4	4	Specialisation course 5	4
Sub-total	14	Sub-total Sub-total	14

Recommended semester schedule – JC-intake students or equivalent

(for students who opt for industrial attachment)

Semester 1	Units	Semester 2	Units
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4
Design and Manufacturing	4	Engineers	4
GEA1000 Quantitative Reasoning with	4	CC1010F Programming Mathedalogy	4
Data	4	CS1010E Programming Methodology	4
DTI/1224 Design Thinking	4	EG1311 Design and Make	4
DTK1234 Design Thinking 4	4	or EG1311BE Design and Make	4
MA1513 Linear Algebra with Differential	2	MAAIF11 Engineering Coloulus	_
Equations	2	MA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for	2	CE2407B Introduction to Numerical	2
Engineers	2	Methods for Engineers	2
PF1101A Project Management and	4	Floating 1 for Cooped Major (from List I)	4
Finance	4	Elective 1 for Second Major (from List I)	4
Sub-total	20	Sub-total	20

Semester 3	Units	Semester 4	Units
BN2104 Quantitative Approaches to	4	BN2204 Fundamentals of Biomechanics	4
Public and Global Health	4	BN2204 Fundamentals of Biomechanics	4
BN2105 Medical Device Life Cycle	4	BN3405 Biomedical Instrumentation	4
Management	4	BN3403 Biofficultal Histrumentation	4
BN2301 Biochemistry & Biomaterials for	4	BN3406 Bioimaging and Al Applications	4
Bioengineers	4		4
BN2404 Biomedical Circuits and Signal	4	ES2631 Critique and Communication of	4
Processing	4	Thinking and Design	4
EE2211 Introduction to Machine		CDE3301 Ideas to Proof-of-Concept	
Learning or EE2213 Introduction to	4	•	6
Artificial Intelligence		(replaces BN3101A)	
EG2401A Engineering Professionalism	2		
Sub-total	22	Sub-total Sub-total	22

Semester 5	Units	Semester 6	Units
BN2201 Quantitative Physiology for Bioengineers	4	EG3611A Industrial Attachment	10
CDE2501 Liveable Cities	4		
GE	4		
Elective 2 for Second Major (from List I)	4		
CDE3301 Ideas to Proof-of-Concept (replaces BN3101A)	6		
Sub-total	22	Sub-total Sub-total	10

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

Recommended semester schedule – JC-intake students or equivalent

(for students who opt for industrial attachment plus a specialisation)

Semester 1	Units	Semester 2	Units
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4
Design and Manufacturing	4	Engineers	4
GEA1000 Quantitative Reasoning with	4	CS1010E Programming Methodology	4
Data	4	C31010E Programming Methodology	4
DTK1234 Design Thinking	4	EG1311 Design and Make	4
	4	or EG1311BE Design and Make	4
MA1513 Linear Algebra with Differential	2	MA1511 Engineering Calculus	2
Equations		WATSTI Eligilieerilig Calculus	2
CE2407A Uncertainty Analysis for	2	CE2407B Introduction to Numerical	2
Engineers		Methods for Engineers	2
PF1101A Project Management and	4	Floative 1 for Second Major (from List I)	4
Finance	4	Elective 1 for Second Major (from List I)	4
Sub-total	20	Sub-total	20

Semester 3	Units	Semester 4	Units
BN2104 Quantitative Approaches to	4	BN2204 Fundamentals of Biomechanics	4
Public and Global Health	4	BN2204 Fundamentals of Biomechanics	4
BN2105 Medical Device Life Cycle	4	BN3405 Biomedical Instrumentation	4
Management	4	BN3403 Biofficultal Histrumentation	4
BN2301 Biochemistry & Biomaterials for	4	BN3406 Bioimaging and AI Applications	4
Bioengineers	4		4
BN2404 Biomedical Circuits and Signal	4	ES2631 Critique and Communication of	4
Processing	4	Thinking and Design	4
EE2211 Introduction to Machine		CDE3301 Ideas to Proof-of-Concept	
Learning or EE2213 Introduction to	4	•	6
Artificial Intelligence		(replaces BN3101A)	
EG2401A Engineering Professionalism	2		
Sub-total	22	Sub-total Sub-total	22

Semester 5	Units	Semester 6	Units
BN2201 Quantitative Physiology for Bioengineers	4	EG3611A Industrial Attachment	10
CDE2501 Liveable Cities	4		
GE	4		
Elective 2 for Second Major (from List I)	4		
CDE3301 Ideas to Proof-of-Concept (replaces BN3101A)	6		
Sub-total	22	Sub-total Sub-total	10

Semester 7	Units	Semester 8	Units
CDE4301 Innovation & Design Capstone	6	CDE4301 Innovation & Design Capstone	6
or CDE4301A Ideas to Start-up	O	or CDE4301A Ideas to Start-up	0
Elective 3 for Second Major	4	Elective 4 for Second Major	4
GE	4	Specialisation course 3	4
Specialisation course 1	4	Specialisation course 4	4
Specialisation course 2	4	Specialisation course 5	4
Sub-total	22	Sub-total Sub-total	22

Recommended semester schedule – JC-intake students or equivalent

(for students in year-long NOC programmes)

Semester 1	Units	Semester 2	Units
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4
Design and Manufacturing	4	Engineers	4
GEA1000 Quantitative Reasoning with	4	CC1010F Programming Mathedalogy	4
Data	4	CS1010E Programming Methodology	4
DTK1224 Design Thinking	4	EG1311 Design and Make	4
DTK1234 Design Thinking	4	or EG1311BE Design and Make	4
MA1513 Linear Algebra with Differential	2	MA1511 Engineering Calculus	2
Equations	2	WA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for	2	CE2407B Introduction to Numerical	2
Engineers		Methods for Engineers	2
PF1101A Project Management and	4	Elective 1 for Second Major (from List I)	4
Finance	4	Elective 1 for Second Major (from List I)	4
Sub-total	20	Sub-total	20

Semester 3	Units	Semester 4	Units
BN2104 Quantitative Approaches to Public and Global Health	4	BN2204 Fundamentals of Biomechanics	4
BN2105 Medical Device Life Cycle Management	4	BN3405 Biomedical Instrumentation	4
BN2301 Biochemistry & Biomaterials for Bioengineers	4	BN3406 Bioimaging and Al Applications	4
BN2404 Biomedical Circuits and Signal Processing	4	ES2631 Critique and Communication of Thinking and Design	4
EE2211 Introduction to Machine Learning <u>or</u> EE2213 Introduction to Artificial Intelligence	4	CDE3301 Ideas to Proof-of-Concept (replaces BN3101A)	6
Sub-total Sub-total	20	Sub-total	22

Semester 5	Units	Semester 6 – NOC	Units
BN2201 Quantitative Physiology for	4		
Bioengineers	4		
CDE2501 Liveable Cities	4		
GE	4	NOC	
Elective 2 for Second Major (from List I)	4		
CDE3301 Ideas to Proof-of-Concept	C		
(replaces BN3101A)	6		
Sub-total	22	Sub-total	20

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

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)

Recommended semester schedule – JC-intake students or equivalent

(for students in one-semester NOC programmes)

Semester 1	Units	Semester 2	Units
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4
Design and Manufacturing	4	Engineers	4
GEA1000 Quantitative Reasoning with	4	CS1010E Programming Mathodology	4
Data	4	CS1010E Programming Methodology	4
DTK1224 Decise Thinking	4	EG1311 Design and Make	4
DTK1234 Design Thinking	4	or EG1311BE Design and Make	4
MA1513 Linear Algebra with Differential	2	MAATTAL Engineering Coloulus	2
Equations	2	MA1511 Engineering Calculus	2
CE2407A Uncertainty Analysis for	2	CE2407B Introduction to Numerical	2
Engineers	2	Methods for Engineers	2
PF1101A Project Management and	4	Floating 1 for Second Major (from List I)	4
Finance	4	Elective 1 for Second Major (from List I)	4
Sub-total Sub-total	20	Sub-total	20

Semester 3	Units	Semester 4	Units
BN2104 Quantitative Approaches to	4	BN2204 Fundamentals of Biomechanics	4
Public and Global Health	4	BN2204 Fundamentals of Biomechanics	4
BN2105 Medical Device Life Cycle	4	BN3405 Biomedical Instrumentation	4
Management	4	BN3405 Biomedical instrumentation	4
BN2301 Biochemistry & Biomaterials for	4	DN2406 Disimaging and Al Applications	4
Bioengineers	4	BN3406 Bioimaging and Al Applications	4
BN2404 Biomedical Circuits and Signal	4	ES2631 Critique and Communication of	4
Processing	4	Thinking and Design	4
EE2211 Introduction to Machine		CDE2201 Ideas to Dreaf of Consent	
Learning or EE2213 Introduction to	4	CDE3301 Ideas to Proof-of-Concept	6
Artificial Intelligence		(replaces BN3101A)	
Sub-total	20	Sub-total	22

Semester 5	Units	Semester 6 – NOC	Units
BN2201 Quantitative Physiology for	4		
Bioengineers	4		
CDE2501 Liveable Cities	4		
GE	4	NOC	
Elective 2 for Second Major (from List I)	4		
CDE3301 Ideas to Proof-of-Concept	6		
(replaces BN3101A)	0		
Sub-total	22	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 2	4
GE	4	UE	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)

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
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4
Design and Manufacturing	4	Engineers	4
GEA1000 Quantitative Reasoning with	4	BN2204 Fundamentals of Biomechanics	4
Data	4	BN2204 Fundamentals of Biomechanics	4
DTV1224 Design Thinking	4	CE2407B Introduction to Numerical	2
DTK1234 Design Thinking	4	Methods for Engineers	2
MA1513 Linear Algebra with Differential	2	RVRC/UTCP course 2 (replaces GE)	4
Equations	2	KVKC/OTCP course 2 (replaces GE)	4
CE2407A Uncertainty Analysis for	2	Elective 1 for Second Major (from List I)	4
Engineers		Elective 1 for Second Major (from List I)	4
PF1101A Project Management and	4	CDE3301 Ideas to Proof-of-Concept	6
Finance	4	(replaces BN3101A)	O
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	Units
BN2104 Quantitative Approaches to	4	BN3405 Biomedical Instrumentation	4
Public and Global Health	4	BN3403 Biomedical instrumentation	4
BN2105 Medical Device Life Cycle	4	BN3406 Bioimaging and Al Applications	4
Management	4	BN3406 Biolinaging and Al Applications	4
BN2301 Biochemistry & Biomaterials for	4	UF	_
Bioengineers	4	UE	4
EG2401A Engineering Professionalism	2	UE	4
RVRC/UTCP course 3 (replaces CDE2501)	4	RVRC/UTCP course 4 (replaces ES2631)	4
Elective 2 for Second Major (from List I)	4		
CDE3301 Ideas to Proof-of-Concept	c		
(replaces BN3101A)	6		
Sub-total	28	Sub-total 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	6	CDE4301 Innovation & Design Capstone	6
or CDE4301A Ideas to Start-up	0	or CDE4301A Ideas to Start-up	U
Elective 3 for Second Major	4	Elective 4 for Second Major	4
BN2201 Quantitative Physiology for	4	Technical Elective 1	4
Bioengineers	4	Technical Elective 1	4
BN2404 Biomedical Circuits and Signal	4	Technical Elective 2	4
Processing	-	reclinical Elective 2	7
EE2211 Introduction to Machine			
Learning or EE2213 Introduction to	4	UE	2
Artificial Intelligence			
Sub-total	22	Sub-total Sub-total	20

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).

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
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4
Design and Manufacturing	4	Engineers	4
GEA1000 Quantitative Reasoning with	4	BN2204 Fundamentals of Biomechanics	4
Data	4	BN2204 Fundamentals of Biomechanics	4
DTK1224 Design Thinking	4	CE2407B Introduction to Numerical	2
DTK1234 Design Thinking	4	Methods for Engineers	2
MA1513 Linear Algebra with Differential	2	DVDC/UTCD course 2 (replaces CE)	4
Equations	2	RVRC/UTCP course 2 (replaces GE)	4
CE2407A Uncertainty Analysis for	2	Floative 1 for Cocond Major (from List I)	4
Engineers	2	Elective 1 for Second Major (from List I)	4
PF1101A Project Management and	4	CDE3301 Ideas to Proof-of-Concept	C
Finance	4	(replaces BN3101A)	6
RVRC/UTCP course 1 (replaces GE)	4	UE	4
Sub-total	24	Sub-total	28

Semester 3	Units	Semester 4 – NOC	Units
BN2104 Quantitative Approaches to Public and Global Health	4		
BN2105 Medical Device Life Cycle Management	4		
BN2301 Biochemistry & Biomaterials for Bioengineers	4	NOC	
RVRC/UTCP course 3 (replaces CDE2501)	4		
Elective 2 for Second Major (from List I)	4		
CDE3301 Ideas to Proof-of-Concept (replaces BN3101A)	6		
Sub-total	26	Sub-total	20

Semester 5	Units	Semester 6	Units
CDE4301 Innovation & Design Capstone	6	CDE4301 Innovation & Design Capstone	c
or CDE4301A Ideas to Start-up	О	or CDE4301A Ideas to Start-up	6
BN2201 Quantitative Physiology for	4	BN3405 Biomedical Instrumentation	4
Bioengineers	4	BN3403 Biomedical instrumentation	4
BN2404 Biomedical Circuits and Signal	4	DN2406 Disimaging and Al Applications	4
Processing	4	BN3406 Bioimaging and Al Applications	4
EE2211 Introduction to Machine			
Learning or EE2213 Introduction to	4	Technical Elective 1	4
Artificial Intelligence			
UE	4	Technical Elective 2	4
RVRC/UTCP course 4 (replaces ES2631)	4	UE	2
Sub-total	26	Sub-total Sub-total	24

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)

Recommended semester schedule – poly-intake students

Semester 1	Units	Semester 2	Units
BN1112 Introduction to Biomedical	4	BN2112 Cell Biology and Analytics for	4
Design and Manufacturing	4	Engineers	4
GEA1000 Quantitative Reasoning with	4	CS1010E Programming Methodology	4
Data			4
PF1101A Project Management and	4	MA1511 Engineering Calculus	2
Finance			
MA1301 Introductory Mathematics *	4	CE2407B Introduction to Numerical	2
(UE)	4	Methods for Engineers	2
Elective 1 for Second Major (from List I)	4	Elective 2 for Second Major (from List I)	4
		CDE3301 Ideas to Proof-of-Concept	6
		(replaces BN3101A)	
		PC1201 Fundamentals of Physics	4
		(UE) – if required	4
Sub-total	20	Sub-total Sub-total	26

Semester 3	Units	Semester 4	Units
BN2104 Quantitative Approaches to	4	BN2204 Fundamentals of Biomechanics	4
Public and Global Health			
BN2105 Medical Device Life Cycle	4	BN3405 Biomedical Instrumentation	4
Management			
BN2301 Biochemistry & Biomaterials for	4	BN3406 Bioimaging and Al Applications	4
Bioengineers		Site for Bioming and 7 in Applications	
MA1513 Linear Algebra with Differential	2	ES2631 Critique and Communication of	4
Equations *		Thinking and Design	
CE2407A Uncertainty Analysis for	2	GE	4
Engineers *			
CDE3301 Ideas to Proof-of-Concept	6	C.F.	4
(replaces BN3101A)		GE	
Sub-total	22	Sub-total	24

Semester 5	Units	Semester 6	Units
CDE4301 Innovation & Design Capstone	6	CDE4301 Innovation & Design Capstone	6
or CDE4301A Ideas to Start-up	0	or CDE4301A Ideas to Start-up	U
BN2201 Quantitative Physiology for	4	Florting 2 for Second Major	4
Bioengineers	4	Elective 3 for Second Major	4
BN2404 Biomedical Circuits and Signal	4	Elective 4 for Second Major	4
Processing	4	Elective 4 for Second Major	4
CDE2501 Liveable Cities	4	Technical Elective 1	4
EE2211 Introduction to Machine			
Learning or EE2213 Introduction to	4	Technical Elective 2	4
Artificial Intelligence *			
EG2401A Engineering Professionalism	2		
Sub-total Sub-total	24	Sub-total	22

^{*} Students who are exempted from MA1301 can take MA1513 and CE2407A in Semester 1 and EE2211/EE2213 in Semester 3.

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)