Innovation & Design Programme
NUS College of Design and Engineering

Bachelor of Science (Business Analytics) with Second Major in Innovation & Design

Cohort AY2023/2024

Course Requirements	Units
Common Curriculum	
BT1101 Introduction to Business Analytics [1]	4
CS1010A/S Programming Methodology [1]	4
GE: Critique and Expression [2]	4
GE: Communities and Engagement [2]	4
GE: Cultures and Connections [2]	4
GE: Singapore Studies [2]	4
IS1108 Digital Ethics and Data Privacy	4
Interdisciplinary Courses [3]	8
Group A course for Second Major [3] (double-counted as Cross-disciplinary Course)	4
Sub-total for Common Curriculum	**40**
Programme Requirements	
MA1311 Matrix Algebra or MA1522 Linear Algebra for Computing	4
MA1521 Calculus for Computing or MA2002 Calculus	4
BT2101 Econometrics Modeling for Business Analytics	4
BT2102 Data Management and Visualisation	4
CS2030 Programming Methodology II	4
CS2040 Data Structures and Algorithms	4
IS2101 Business and Technical Communication	4
ST2334 Probability and Statistics	4
BT3103 Application Systems Development for Business Analytics	4
IS3103 Information Systems Leadership and Communication	4
BT4103 Business Analytics Capstone Project	8
Programme electives	20
IS4010 Industry Internship Programme or CP3880 Advanced Technology Attachment Programme or BT4101 B.Sc. Dissertation	12
Sub-total for Programme Requirements	**80**
Unrestricted Electives	
Group B course for Second Major	4
Group C course for Second Major (Innovation & Enterprise electives)	8
CDE3301/EG3301R Ideas to Proof-of-Concept (over 2 consecutive semesters)	12
CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up (over 2 consecutive semesters)	12
Other unrestricted electives	4
Sub-total for Unrestricted Electives	**40**
Total	**160**

Notes:

[1] Data Literacy and Digital Literacy pillars are satisfied by BT1101 and CS1010S, respectively.

[2] Students may read equivalent courses in NUS College (NUSC), University Town College Programme (UTCP), and Ridge View Residential Programme (RVRC).

[3] Students in this Second Major are highly recommended to read DTK1234 Design Thinking or EG1311 Design and Make as an Interdisciplinary Course before taking the Group A course.

(updated 11 July 2024)

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Recommended semester schedule

Semester 1	Units	Semester 2	Units
BT1101 Introduction to Business Analytics	4	BT2102 Database Management and Visualization	4
CS1010A/S Programming Methodology	4	CS2030 Programming Methodology II	4
IS1108 Digital Ethics and Data Privacy	4	IS2101 Business and Technical Communication	4
MA1311 Matrix Algebra or MA1522 Linear Algebra for Computing	4	MA1521 Calculus for Computing or MA2002 Calculus	4
Interdisciplinary Course 1 ^	4	Group A/B course for Second Major	4
Sub-total	**20**	**Sub-total**	**20**

Semester 3	Units	Semester 4	Units
BT2101 Econometrics Modeling for Business Analytics	4	BT3103 Application Systems Development for Business Analytics	4
CS2040 Data Structures and Algorithms	4	IS3103 Information Systems Leadership and Communication	4
ST2334 Probability and Statistics	4	GE	4
GE	4	GE	4
Group A/B course for Second Major	4	CDE3301/EG3301R Ideas to Proof-of-Concept	6
Sub-total	**20**	**Sub-total**	**22**

Semester 5	Units	Semester 6	Units
CDE3301/EG3301R Ideas to Proof-of-Concept	6	IS4010 Industry Internship Programme	12
BT4103 Business Analytics Capstone Project	8		
Interdisciplinary Course 2	4		
GE*	4		
Sub-total	**22**	**Sub-total**	**12**

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
Innovation & Enterprise Elective 1	4	Innovation & Enterprise Elective 2	4
Programme Elective 1	4	Programme Elective 4	4
Programme Elective 2	4	Programme Elective 5	4
Programme Elective 3	4	UE	4
Sub-total	**22**	**Sub-total**	**22**

^ Students in this Second Major are highly recommended to read DTK1234 Design Thinking or EG1311 Design and Make as an Interdisciplinary Course before taking the Group A course.

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

(updated 11 July 2024)

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Recommended semester schedule

(for students in year-long NOC programmes)

Semester 1	Units	Semester 2	Units
BT1101 Introduction to Business Analytics	4	BT2102 Database Management and Visualization	4
CS1010A/S Programming Methodology	4	CS2030 Programming Methodology II	4
IS1108 Digital Ethics and Data Privacy	4	IS2101 Business and Technical Communication	4
MA1311 Matrix Algebra or MA1522 Linear Algebra for Computing	4	MA1521 Calculus for Computing or MA2002 Calculus	4
Interdisciplinary Course 1 ^	4	Group A/B course for Second Major	4
Sub-total	**20**	**Sub-total**	**20**

Semester 3	Units	Semester 4	Units
BT2101 Econometrics Modeling for Business Analytics	4	BT3103 Application Systems Development for Business Analytics	4
CS2040 Data Structures and Algorithms	4	IS3103 Information Systems Leadership and Communication	4
ST2334 Probability and Statistics	4	GE	4
GE	4	GE	4
Group A/B course for Second Major	4	CDE3301/EG3301R Ideas to Proof-of-Concept	6
Sub-total	**20**	**Sub-total**	**22**

Semester 5	Units	Semester 6 – NOC	Units
CDE3301/EG3301R Ideas to Proof-of-Concept	6	NOC	
BT4103 Business Analytics Capstone Project	8		
Interdisciplinary Course 2	4		
GE*	4		
Sub-total	**22**	**Sub-total**	**20**

Semester 7 – NOC	Units	Semester 8	Units
NOC		Programme Elective 1	4
		Programme Elective 2	4
		Programme Elective 3	4
		Programme Elective 4	4
		UE	2
Sub-total	**18**	**Sub-total**	**18**

A year-long NOC programme comprises the following courses:

- ETP3206L Innovation & Enterprise Internship (12 units) – fulfils Industrial Experience Requirement (12 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 one Level 3000 Business Analytics Programme Elective (4 units)
- ETP2271 Discovering Resilience and Purpose (2 units) – counted as UE (2 units)
- Entrepreneurship courses (4 or 8 units) – replaces Innovation & Enterprise electives (up to 8 units – students will need to complete additional Innovation & Enterprise Electives in NUS if they are unable to complete 8 units of entrepreneurship courses during NOC)

(updated 11 July 2024)

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Recommended semester schedule

(for students in one-semester NOC programmes)

Semester 1	Units	Semester 2	Units
BT1101 Introduction to Business Analytics	4	BT2102 Database Management and Visualization	4
CS1010A/S Programming Methodology	4	CS2030 Programming Methodology II	4
IS1108 Digital Ethics and Data Privacy	4	IS2101 Business and Technical Communication	4
MA1311 Matrix Algebra or MA1522 Linear Algebra for Computing	4	MA1521 Calculus for Computing or MA2002 Calculus	4
Interdisciplinary Course 1 ^	4	Group A/B course for Second Major	4
Sub-total	**20**	**Sub-total**	**20**

Semester 3	Units	Semester 4	Units
BT2101 Econometrics Modeling for Business Analytics	4	BT3103 Application Systems Development for Business Analytics	4
CS2040 Data Structures and Algorithms	4	IS3103 Information Systems Leadership and Communication	4
ST2334 Probability and Statistics	4	GE	4
GE	4	GE	4
Group A/B course for Second Major	4	CDE3301/EG3301R Ideas to Proof-of-Concept	6
Sub-total	**20**	**Sub-total**	**22**

Semester 5	Units	Semester 6 – NOC	Units
CDE3301/EG3301R Ideas to Proof-of-Concept	6	NOC	
BT4103 Business Analytics Capstone Project	8		
Interdisciplinary Course 2	4		
GE*	4		
Sub-total	**22**	**Sub-total**	**22**

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
Programme Elective 1	4	Programme Elective 4	4
Programme Elective 2	4	Programme Elective 5	4
Programme Elective 3	4	UE	2
Sub-total	**18**	**Sub-total**	**16**

^ Students in this Second Major are highly recommended to read DTK1234 Design Thinking or EG1311 Design and Make as an Interdisciplinary Course before taking the Group A course.

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

A one-semester NOC programme comprises the following courses:

- ETP3201L Innovation & Enterprise Internship (12 units) – fulfils Industrial Experience Requirement (12 units)
- ETP3204S Innovation & Enterprise Internship Practicum (4 units) – replaces Innovation & Enterprise Elective 1 (4 units)
- Entrepreneurship course (4 units) – replaces Innovation & Enterprise Elective 2 (4 units)
- ETP2271 Discovering Resilience and Purpose (2 units) – counted as UE (2 units)

(updated 11 July 2024)