CHECKLIST Bachelor of Computer Science (2451): Transition to new program (commencing 2024)

IMPORTANT Notes:

- The information contained in this document is intended as general advice only. Students must follow the program rules & requirements listed on the Programs and Courses Website relevant to the year they commence. This planner must be used in conjunction with your program duration course list and program rules.
- Students need to check future course offerings, prerequisites, incompatibilities and restrictions for all courses as these are subject to change.
- Students cannot take courses that are incompatible with courses already counted towards their program, and cannot count the same course twice.

Complete 48 units comprising:

1. 16 units for all BCompSc Core Courses, and
2. 16 to 32 units for BCompSc Plan Options:
   a. BCompSc No major Option, being
      i. 2 units for Computer Science Extension course; and
      ii. 8 to 16 units from Computer Science Introductory Electives; and
      iii. 6 to 22 units from Computer Science Advanced electives; or
   b. BCompSc Single Major Option, being
      i. 16 units for a *Major;
      *Majors Available in; Data Science; Cyber security; Machine Learning; Programming Language; Scientific Computing; or
   c. BCompSc Extended Major Option, being
      i. 24 units for an Extended Major Data Science; or
   d. BComPSc ***Two Major Option, being
      i. 16 units for a Major; and
      ii. 16 units for another Major where courses that are compulsory in both Majors must be substituted by program electives at the same level or higher; and
      ***Majors Available in Data Science; Cyber security; Machine Learning; Programming Language; Scientific Computing
3. 0 to 16 unit from BCompSc Breadth Elective Courses, and
4. 0 to 16 units from BCompSc Program Elective Courses, and
5. 0 to 16 unit from General Elective Courses

NB: of the 48 units required for the program, students must complete at least 8 units of courses at level 3 or higher and no more than 24 units at level 1.

✓/X compl.	BCompSc Core Courses (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	16 units for all **Core Courses**					
	COMP2048 Theory of Computing	1	2		Course must be completed	
	COMP3506 Algorithms & Data Structures	2	2		Course must be completed	
	CSSE1001 Introduction to Software Engineering	1,2	2		Course must be completed	
	CSSE2002 Programming in the Large	1,2	2		Course must be completed	

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	CSSE2010 Introduction to Computer Systems	1,2	2		Course must be completed	
	INFS1200 Introduction to Information Systems	1,2	2		Course must be completed	
	MATH1061 Discrete Mathematics	1,2	2		Course must be completed	
	STAT1201 Analysis of Scientific Data **or** **STAT1301** Advanced Analysis of Scientific Data	1,2,S 2	2 2		**STAT2203 Probability Models & Data Analysis for Engineering**	

BCompSc No Major Option

Complete 16 to 32 units comprising:

i. 2 units for all Computer Science Extension Course, and
ii. 8 to 16 units from Computer Science Introductory Elective Courses, and
iii. 6 to 22 units from Computer Science Advanced Elective Courses

✓/X compl.	BCompSc No Major	Sem offering	#	First offered	Approved substitution	Last offered
	2 units for Computer Science Extension course					
	DECO3801 Design Computing Studio 3 - Build	2	2		Course must be completed	
	8 to 16 units from Computer Science Introductory Electives					
	COMP1100 Introduction to Software Innovation	1,2	2	**1/24**		
	COMP2140 Web/Mobile Programming	2	2		No substitution	
	COSC2500 Numerical Methods in Computational Science	2	2		No substitution	
	CSSE2310 Computer Systems Principles and Programming	1,2	2		No substitution	
	DATA2001 Fundamentals of Data Science	2	2		No substitution	
	DECO1400 Introduction to Web Design	1	2		No substitution	
	DECO2500 Human-Computer Interaction	1	2		No substitution	
	INFS2200 Relational Database Systems	2	2		No substitution	
	MATH1051 Calculus & Linear Algebra I **or** **MATH1071** Advanced Calculus & Linear Algebra	1,2,S 1	2		No substitution	
	6 to 22 units from Computer Science Advanced Electives					
	COMP3301 Operating Systems Architecture	2	2		No substitution	
	COMP3320 Vulnerability Assessment and Penetration Testing	1	2		No substitution	
	COMP3400 Functional & Logic Programming	1	2		No substitution	

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	COMP3702 Artificial Intelligence	2	2		No substitution	
	COMP3710 Pattern Recognition and Analysis	2	2		No substitution	
	COMP3820 Digital Health Software Project	2	2		No substitution	
	COMP4403 Compilers and Interpreters	1	2		No substitution	
	COMP4702 Machine Learning	1	2		No substitution	
	COMP4703 Natural Language Processing with Python	2	2		No substitution	
	CYBR3000 Information Security	2	2		**COMS3000** Information Security (discontinued)	**2/20**
	COMS3200 Computer Networks 1	1	2		No substitution	
	COSC3000 Visualization, Computer Graphics & Data Analysis	1	2		No substitution	
	COSC3500 High-Performance Computing	2	2		No substitution	
	CSSE3012 The Software Process	1	2		**CSSE3002** The Software Process (discontinued)	**1/20**
	CSSE3100 Reasoning About Programs	1	2		No substitution	
	CSSE3200 Software Engineering Studio: Design, Implement and Test	2	2		No substitution	
	DECO3500 Social & Mobile Computing	2	2		No substitution	
	INFS3200 Advanced Database Systems	1,2	2		No substitution	
	INFS3202 Web Information Systems	1	2		No substitution	
	INFS3208 Cloud Computing	2	2		No substitution	
	INFS4203 Data Mining	2	2		No substitution	
	INFS4205 Advanced Techniques for High Dimensional Data	1	2		No substitution	
	MATH3201 Scientific Computing: Advanced Techniques and Applications	1	2		No substitution	
	MATH3202 Operations Research & Mathematical Planning	1	2		No substitution	
	MATH3302 Coding & Cryptography	1	2		No substitution	

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0 to 16 unit from BCompSc Breadth Elective Courses

0 to 16 units from BCompSc Program Elective Courses

0 to 16 unit from General Elective Courses

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Data Science Major Option

Complete 16 units comprising:

i. 16 units for all Data Science Compulsory Courses

✓/X compl.	Major in Data Science (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	16 units for all Data Science Compulsory Courses					
	COMP4702 Machine Learning	1	2		Course must be completed	
	DATA2001 Fundamentals of Data Science	2	2		Course must be completed	
	DECO3801 Design Computing Studio 3 - Build	2	2		Course must be completed	
	INFS2200 Relational Database Systems	2	2		Course must be completed	
	INFS3200 Advanced Database Systems	1	2		Course must be completed	
	MATH1051 Calculus & Linear Algebra **or** **MATH1071** Advanced Calculus & Linear Algebra	1,2,S 1	2		Course must be completed	
	STAT2003 Mathematical Probability	1	2		Students who have completed STAT2203 towards the core program requirement (i.e. in place of STAT1201 or STAT1301) are exempt from the requirement to complete STAT2003 towards this major and must complete a Computer Science Introductory Elective or Computer Science Advanced Elective in place of STAT2003. Students who have completed STAT1201 or STAT1301 towards the core program requirement must complete STAT2003.	
	STAT2004 Statistical Modelling & Analysis	2	2		Course must be completed	

	0 to 16 unit from BCompSc Breadth Elective Courses

	0 to 16 units from BCompSc Program Elective Courses

	0 to 16 unit from General Elective Courses

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Cyber Security Major Option

Complete 16 units comprising:

i. 4 units from Cyber Security Introductory Elective Courses, and

ii. 12 units for all Cyber Security Compulsory Courses

✓/X compl.	Major in Cyber Security (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	4 units from Cyber Security Introductory Electives					
	CRIM1000 Introduction to Criminology	1	2		No substitution	
	DECO2500 Human-Computer Interaction	1	2		No substitution	
	INFS2200 Relational Database Systems	2	2		No substitution	
	12 units for Cyber Security Compulsory Courses					
	COMP3301 Operating Systems Architecture	2	2		Course must be completed	
	COMP3320 Vulnerability Assessment & Penetrating Testing	1	2		Course must be completed	
	CYBR3000 Information Security	2	2		**COMS3000** Information Security (discontinued)	**2/20**
	COMS3200 Computer Networks 1	1	2		Course must be completed	
	CSSE2310 Computer Systems Principles & Programming	2	2		Course must be completed	
	DECO3801 Design Computing Studio 3 - build	2	2		Course must be completed	

0 to 16 unit from BCompSc Breadth Elective Courses

0 to 16 units from BCompSc Program Elective Courses

0 to 16 unit from General Elective Courses

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Programming Languages Major Option

Complete 16 units comprising:

i. 2 units from Programming Languages Level 2 Elective Courses, and

ii. 14 units for all Programming Languages Compulsory Courses

✓/X compl.	Major in Programming Languages (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	2 units from Programming Languages Level 2 Electives					
	DECO2500 Human Computer Interaction	1	2		No substitution	
	INFS2200 Relational Database Systems	2	2		No substitution	
	14 units for Programming Languages Compulsory Electives					
	COMP2140 Web/Mobile Programming	2	2		Course must be completed	
	COMP3400 Functional & Logic Programming	1	2		Course must be completed	
	COMP4403 Compilers and Interpreters	1	2		Course must be completed	
	CSSE2310 Computer Systems Principles and Programming	1,2	2		Course must be completed	
	CSSE3100 Reasoning About Programs	1	2		Course must be completed	
	DECO1400 Introduction to Web Design	1	2		Course must be completed	
	DECO3801 Design Computing Studio 3 - Build	2	2		Course must be completed	
	0 to 16 unit from BCompSc Breadth Elective Courses					
	0 to 16 units from BCompSc Program Elective Courses					
	0 to 16 unit from General Elective Courses					

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Machine Learning Major Option

Complete 16 units comprising:

i. 16 units from Machine Learning Compulsory Courses

✓/X compl.	Major in Machine Learning (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	16 units for all Machine Learning Compulsory Courses					
	COMP3702 Artificial Intelligence	2	2		Course must be completed	
	COMP3710 Pattern Recognition and Analysis	2	2		Course must be completed	
	COMP4702 Machine Learning	1	2		Course must be completed	
	DECO3801 Design Computing Studio 3 - Build	2	2		Course must be completed	
	MATH1051 Calculus & Linear Algebra I **or** **MATH1071** Advanced Calculus & Linear Algebra I	1,2,S1	2		Course must be completed	
	MATH1052 Multivariate Calculus & Ordinary Differential Equations **or** **MATH1072** Advanced Multivariate Calculus & Ordinary Differential Equations	1,2	2		Course must be completed	
	MATH2302 Discrete Mathematics II	2	2		Course must be completed	
	STAT3006 Statistical Learning	2	2		Course must be completed	
	0 to 16 unit from BCompSc Breadth Elective Courses					
	0 to 16 units from BCompSc Program Elective Courses					
	0 to 16 unit from General Elective Courses					

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Scientific Computing Major Option

Complete 16 units comprising:

i. 16 units from Scientific Computing Compulsory Courses

✓/X compl.	Major in Scientific Computing (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	16 units for all Scientific Computing Compulsory Courses					
	COSC2500 Numerical Methods in Computational Science	2	2		Course must be completed	
	COSC3000 Visualization, Computer Graphics & Data Analysis	1	2		Course must be completed	
	COSC3500 High-Performance Computing	2	2		Course must be completed	
	DECO3801 Design Computing Studio 3 - Build	2	2		Course must be completed	
	INFS2200 Relational Database Systems	2	2		Course must be completed	
	MATH1051 Calculus & Linear Algebra I **or** **MATH1071** Advanced Calculus & Linear Algebra I	1,2, S 1	2		Course must be completed	
	MATH1052 Multivariate Calculus & Ordinary Differential Equations **or** **MATH1072** Advanced Multivariate Calculus & Ordinary Differential Equations	1,2	2		Course must be completed	
	SCIE2100 Bioinformatics 1: Introduction	1	2		Course must be completed	
	0 to 16 unit from BCompSc Breadth Elective Courses					
	0 to 16 units from BCompSc Program Elective Courses					
	0 to 16 unit from General Elective Courses					

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Data Science Extended Major Option

Complete 24 units comprising:

i. 24 units for all Data Science Extended Major Compulsory Courses

✓/X compl.	Extended Major in Data Science (24 units)	Sem offering	#	First offered	Approved substitution	Last offered
	24 units for all Data Science Extended Major Compulsory Courses					
	COMP3702 Artificial Intelligence	2	2		No substitution	
	COMP4702 Machine Learning	1	2		No substitution	
	DATA2001 Fundamentals of Data Science	2	2		No substitution	
	DECO3801 Design Computing Studio 3 - Build	2	2		No substitution	
	INFS2200 Relational Database Systems	2	2		No substitution	
	INFS3200 Advanced Database Systems	1	2		No substitution	
	INFS3208 Cloud Computing	2	2		No substitution	
	INFS4203 Data Mining	2	2		No substitution	
	INFS4205 Advanced Techniques for High Dimensional Data	1	2		No substitution	
	MATH1051 Calculus & Linear Algebra **or** **MATH1071** Advanced Calculus & Linear Algebra I	1,2, S 1	2		No substitution	
	STAT2003 Mathematical Probability	1	2		Students who have completed STAT2203 towards the core program requirement (i.e. in place of STAT1201 or STAT1301) are exempt from the requirement to complete STAT2003 towards this major and must complete a Computer Science Introductory Elective or Computer Science Advanced Elective in place of STAT2003. Students who have completed STAT1201 or STAT1301 towards the core program requirement must complete STAT2003.	
	STAT2004 Statistical Modelling & Analysis	2	2		No substitution	

0 to 16 unit from BCompSc Breadth Elective Courses

0 to 16 units from BCompSc Program Elective Courses

0 to 16 unit from General Elective Courses

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BCompSc Two Major Option

Complete 32 units comprising:

i. 32 units for 2 Majors from Computer Science Majors*

*Please refer to information located under BCompSc Plan Options > BCompSc Two Major Option on Program and Courses for specific program requirements regarding approved course substitutions.

✓/X compl.	BCompSc Two Major Option (32 units)	Sem offering	#	First offered	Approved substitution	Last offered
	16 units from Cyber Security Major					
	16 units from Programming Language Major					
	16 units from Data Science Major					
	16 units from Machine Learning Major					
	16 units from Scientific Computing Major					

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	0 to 16 units from BCompSc Breadth Electives					
	DECO1100 Design Thinking	1	2		No substitution	
	DECO1400 Introduction to Web Design	1	2		No substitution	
	DECO1800 Design Computing Studio 1 – Interactive Technology	2	2		No substitution	
	DECO2300 Digital Prototyping	2	2		No substitution	
	DECO2850 Design Computing Studio 2 - Interaction Design	2	2		**DECO2800** Design Computing Studio 2 – Testing & Evaluation (Discontinued)	2/22
	DECO3850 Physical Computing Studio	1	4		No substitution	
	ENGG1300 Introduction to Electrical Systems	1,2	2		No substitution	
	MATH1050 Mathematical Foundations	1,2	2		No Substitution	
	MATH1051 Calculus & Linear Algebra I	1,2,S	2		No Substitution	
	MATH1052 Multivariate Calculus & Ordinary Differential Equations	1,2	2		No Substitution	
	MATH2001 Calculus & Linear Algebra II	1,2	2		**MATH2000** Calculus & Linear Algebra II (discontinued)	**2/20**
	MATH2301 Linear & Abstract Algebra & Number Theory	1	2		No Substitution	
	MATH2302 Discrete Mathematics II	2	2		No Substitution	
	MATH3104 Mathematical Biology	1	2		No Substitution	
	SCIE1000 Theory & Practice in Science	1,2,S	2		No Substitution	
	SCIE2100 Bioinformatics 1: Introductions	1	2		No Substitution	
	STAT2003 Mathematical Probability	1	2		No Substitution	
	STAT2004 Statistical Modelling & Analysis	2	2		No Substitution	

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