Bachelor of Computer and Information Sciences BCIS 2025
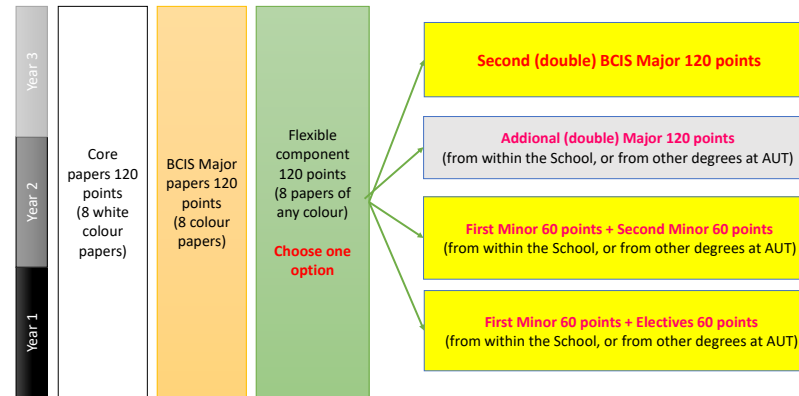
		Digital Services (DiS)	Networks and Cybersecurity (NC)	Software Development (SD)	Data Science (DaS)	Computer Science (CS)	Artificial Intelligence (AI) Minor Only
Year 1	**CORE**	COMP500 Programming Concepts and Techniques (S1, S2, SS) COMP501 Computing Technology in Society (S1, S2) DIGD507 Mahi Tahi: Collaborative Practices (S1, S2) *Choose* **ONE** : **MATH502** Algebra and Discrete Mathematics (S2), *or* **MATH503** Mathematics for Computing (S1, S2, SS) COMP507 IT Project Management (S1, S2) COMP508 Database System Design (S1, S2)					**Artificial Intelligence (AI) Minor Only** *Students doing Data Science major cannot do AI minor*
	MAJOR	**INFS502** Digital Services in IT (S2)	**COMP504** Networks and Internet (S1, S2)	**COMP503 Object Oriented Programming** Programming (S1, S2) *Pre-req: COMP500/ENSE501*	**COMP517** Data Analysis (S2)	**COMP503** Object Oriented Programming (S1, S2) *Pre-req: COMP500/ENSE501*	**COMP517** Data Analysis (S2)
Year 2	**MAJOR**	**INFS603** Needs Analysis, Acquisition and Training (S1)	**COMP604** Operating Systems (S1, S2) *Pre-req: [COMP503/ENSE502/ENSE504] or COMP504*	**COMP603** Program Design and Construction (S1, S2) *Pre-req: COMP503/COMP610/ENSE502*	**COMP615** Foundations of Data Science (S1) *Pre-req: COMP517*	**COMP610** Data Structures and Algorithms (S1, S2) *Pre-req: COMP503/ENSE502/ENSE602*	**Choose TWO** **COMP610** Data Structures and Algorithms (S1, S2) *Pre-req: COMP503/ENSE502/ENSE602* (or)
		INFS604 Service Modelling (S1)	**COMP607** Information Security Technologies (S2) *Pre-req: COMP501*	**COMP610** Data Structures and Algorithms (S1, S2) *Pre-req: COMP503/ENSE502/ENSE602*	**COMP616** Statistics for Data Science (S1) *Pre-req: MATH502 or MATH503*	**COMP611** Algorithm Design and Analysis (S2) *Pre-req: COMP610*	**COMP613** Combinatorics and Graph Theory (S1) *Pre-req: COMP500 and [MATH502 or MATH503]* (or)
		INFS605 Microservices (S2)	**COMP609** Network and System Administration (S1) *Pre-req: COMP500 and COMP504*	**COMP602** Software Development Practice (S1, S2) *Pre-req: COMP603 or COMP610*	**STAT603** Forecasting (S2) *Pre-req: MATH502 or MATH503*	**COMP613** Combinatorics and Graph Theory (S1) *Pre-req: COMP500 and [MATH502 or MATH503]*	**COMP615** Foundations of Data Science (S1) *Pre-req: COMP517*
		COMP603 Program Design and Construction (S1, S2) *Pre-req: COMP503/COMP610/ENSE502* (or) **COMP607** Information Security Technologies (S2) *Pre-req: COMP501*	**ENEL611** Computer Network Applications (S1) *Pre-req: COMP504 or ENEL504*	**COMP604** Operating Systems (S1, S2) *[COMP503/ENSE502/ENSE504] or COMP504* (or) **COMP611** Algorithm Design and Analysis (S2) *Pre-req: COMP610*	**COMP610** Data Structures and Algorithms (S1, S2) *Pre-req: COMP503/ENSE502/ENSE602* (or) **COMP613** Combinatorics and Graph Theory (S1) *Pre-req: COMP500 and [MATH502 or MATH503]*	**COMP612** Computer Graphics Programming (S2) *[MATH503 or MATH502] and [COMP603 or COMP610]*	
Year 3	**CORE**	COMP702 Research and Development Project (Part 1) (S1, S2) COMP703 Research and Development Project (Part 2) (S1, S2)					
	MAJOR	**Choose THREE** **INFS704** Service Innovation and Design (S1) (or) **COMP718** Information Security Management (S1) (or) **COMP726** Blockchains and Cryptocurrencies (S2) (or) **COMP728** IoT and Applications (S2)	**COMP715** Network Security (S2) *Pre-req: ENEL611* **COMP714** Advanced Network Technologies (S2) *Pre-req: COMP609* (or) **COMP729** Enterprise Networks (S2) *Pre-req: COMP504/ENEL504* **COMP716** Highly Secure Systems (S1) *Pre-req: COMP611 or [ENGE501 and COMP610]* (or) **COMP718** Information Security Management (S1)	**COMP719** Applied Human Computer Interaction (S1) **ENSE701** Contemporary Issues in Software Engineering (S1, S2) *Pre-req: COMP603 or [COMP610/ENSE600]* **COMP713** Distributed and Mobile Systems (not running) *Pre-req: COMP611* (or) **COMP721** Web Development (S1) *Pre-req: COMP603/ENSE600*	**COMP717** Artificial Intelligence (S1) *Pre-req: COMP500 or equivalent; 60 points at level 6 major* **COMP723** Data Mining and Knowledge Engineering (S2) **COMP700** Text and Vision Intelligence (S2) (or) **COMP701** Nature Inspired Computing *Pre-req: COMP500* (S1)	**COMP711** Theory of Computation (S2) *Pre-req: COMP610 or COMP613* **COMP712** Programming Languages (S2) *Pre-req: COMP603/ENSE502* **COMP713** Distributed and Mobile Systems (not running) (or) **COMP719** Applied Human Computer Interaction (S1)	**COMP700** Text and Vision Intelligence (S2) (or) **COMP701** Nature Inspired Computing *Pre-req: COMP500* (S1) **COMP717** Artificial Intelligence (S1) *Pre-req: COMP500 or equivalent; 60 points at level 6 major*

S1: Offered in Semester 1
S2: Offered in Semester 2
SS: Offered in Summer Semester

Pre-req: Prerequisite paper(s)
Note:

All courses are 15 points
MATH502 is highly recommended for Computer Science major as a replacement for MATH503 (core)

Software Development Major (Game programming pathway)
(COMP612 and COMP710) can replace (COMP602 and COMP713/COMP721) only if **BOTH (COMP612 and COMP710)** are taken
COMP612 Computer Graphics Programming (S2)   Pre-req: [MATH503 or MATH502] and [COMP603 or COMP610]
COMP710 Game Programming (S1)   Pre-req: COMP612

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Year 3 / Year 2 / Year 1	Core papers 120 points (8 white colour papers)	BCIS Major papers 120 points (8 colour papers)	Flexible component 120 points (8 papers of any colour) **Choose one option**

Second (double) BCIS Major 120 points

Addional (double) Major 120 points
(from within the School, or from other degrees at AUT)

First Minor 60 points + Second Minor 60 points
(from within the School, or from other degrees at AUT)

First Minor 60 points + Electives 60 points
(from within the School, or from other degrees at AUT)

Notes:

• **Additional Major:** Subject to the conditions set out on the Additional Major requirements, students can take up an additional major (120 points) from either within the School or from other degrees at AUT https://www.aut.ac.nz/study/study-options/Additional-majors-and-minors-for-bachelors-degrees

• **Minors:** Students can choose at least one (up to two) additional minor (60 points each) within the School or from other degrees in AUTbut subject to the conditions set out on the Minor requirements
https://www.aut.ac.nz/study/study-options/Additional-majors-and-minors-for-bachelors-degrees

• **Electives:** Students who are doing a single major and single minor can choose 4 elective papers (60 points) at any level (5, 6 or 7) to make up the 120 points in the flexible component. They can be from within the School or from other degrees in AUT as long as the content doesn't overlap with any of the completed papers.

• **Artificial intelligence minor** is not available to students taking the Data Science major.

• **Double major** student, your two majors can have up to 30 points in common to meet the major requirement (i.e., COMP503 count toward Software Development and Computer Science Major). **You still need 360 points in total from different courses to complete your degree.**

• **Software Development Major and Computer Science Minor** students cannot count COMP503 towards both major/minor, they must take an additional level 6/7 course in their CS minor, and vice versa.

• **COMP702 and COMP703**: Students can enrol in the Research and Development Project courses once they have completed all level 5 and 6 core and major courses.

• **Course level** is the first digit of the numeric part of the alphanumerical paper code (E.g., COMP607 is a level 6 course). Generally you can take the courses during any year of study as long as you met the pre-prerequisite

Please contact the CMS Undergrad Team (program administrators): cmsundergrad@aut.ac.nz for further details and help with enrolment.