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BACHELOR OF COMPUTER AND INFORMATION SCIENCES

PROGRAMME STRUCTURE 2027

BCIS STRUCTURE OVERVIEW

Year 1	BCIS Core L5	BCIS Core L5	BCIS Core L5	BCIS Core L5	BCIS Core L5	BCIS Core L5	BCIS Major L5	Flexible Component
Year 2	BCIS Major L6	BCIS Major L6	Flexible Component	Flexible Component	BCIS Major L6	BCIS Major L6	Flexible Component	Flexible Component
Year 3	COMP702	BCIS Major L7	BCIS Major L7	BCIS Major L7	COMP703	Flexible Component	Flexible Component	Flexible Component

Each course is 15 points unless otherwise indicated | 360 points total

Step 1: Choose [pathway](#) and [major/minor](#)

Step 2: Choose [courses](#)

Step 3: Check timetable and enrol via [My AUT](#)

BCIS PATHWAYS

Double Majors	
BCIS core courses	120 pts
First major courses from BCIS	120 pts
Second major courses from BCIS or other AUT degrees	120 pts

Single Major + Double Minors	
BCIS core courses	120 pts
Major courses from BCIS	120 pts
First minor courses from BCIS or other AUT degrees	60 pts
Second minor courses from BCIS or other AUT degrees	60 pts

Single Major + Single Minor + Electives	
BCIS core courses	120 pts
Major courses from BCIS	120 pts
Minor courses from BCIS or other AUT degrees	60 pts
Electives from BCIS or other AUT degrees at any level	60 pts

BCIS CORE COMPULSORY REQUIREMENTS

Level 5	
COMP500 Programming Concepts and Techniques	S1, S2
COMP501 Computing Technology in Society	S1, S2
COMP507 IT Project Management	S1, S2
COMP508 Database System Design	S1, S2
DIGD507 Collaborative Practices Mahitahi	S1, S2
MATH503 Mathematics for Computing	S1, S2

Level 7	
<i>*Only available after all L5 & L6 core and major courses are completed</i>	
<i>**Must be taken in consecutive semesters</i>	
COMP702 Research and Development Project Part 1	S1, S2
COMP703 Research and Development Project Part 2	S1, S2

BCIS MAJORS/MINORS

Computer Science	Networks and Cybersecurity
Data Science	Software Development
<i>*Cannot be taken with Artificial Intelligence minor</i>	Artificial Intelligence
Digital Services	<i>*Available as a minor only</i>
	<i>**Cannot be taken with Data Science major/minor</i>

IMPORTANT NOTES:

- Course level is the first digit of the numeric part of the course code.
- Overlapping courses only count towards both majors when the Double Majors pathway is taken. An additional 15 points of elective is to be taken to compensate for each of the overlapping course.
- 30 points maximum of overlapping courses may count towards both majors.
- Overlapping courses do *not* count towards both a major and a minor. A different course within your minor must be taken.
- Software Development: if **COMP705** or **ENSE701** was completed prior to 2027, it still counts towards Software Development major/minor and graduation requirements.
- COMP503 in Computer Science/Software Development major/minor pathways: an additional course in the minor must be taken in place of the overlap. [Seek advice & approval from the Major Leader and/or Programme Director.](#)
- Computer Science & Data Science double majors pathway: an additional course must be taken in place of the overlapping COMP610/COMP613.
- Visit [Additional majors and minors for bachelor's degrees](#) & [Elective courses](#) for more information about flexible components.

For further information and/or assistance, please contact the CMS Undergraduate Team: cmsundergrad@aut.ac.nz.

BCIS COURSES

COMPUTER SCIENCE

Major: Complete 8 courses (120 pts)

Minor: Complete COMP503 + 30 pts L6 + 15 pts L7 (60 pts)

COMP503 Object Oriented Programming <i>Co-requisite: COMP500</i>	S1, S2
COMP610 Data Structures and Algorithms <i>Pre-requisite: COMP503</i>	S1, S2
COMP611 Algorithm Design and Analysis <i>Pre-requisite: COMP610</i>	S2
COMP612 Computer Graphics Programming <i>Pre-requisite: MATH503 and (COMP603 or COMP610)</i>	S1, S2
COMP613 Combinatorics and Graph Theory <i>Pre-requisite: COMP500 and MATH503</i>	S1
COMP711 Theory of Computation <i>Pre-requisite: COMP610 or COMP613</i>	S2
COMP712 Programming Languages <i>Pre-requisite: COMP603 or COMP610</i>	S2
COMP713 Distributed and Mobile Systems (*NOT OFFERED IN 2027) <i>Pre-requisite: COMP611</i>	
OR	
COMP719 Applied Human Computer Interaction	S1, S2

DATA SCIENCE

Major: Complete 8 courses (120 pts)

Minor: Complete COMP517 + 30 pts L6 + 15 pts L7 (60 pts)

**Cannot be taken with Artificial Intelligence minor*

COMP517 Data Analysis	S1, S2
COMP610 Data Structures and Algorithms <i>Pre-requisite: COMP503</i>	S1, S2
OR	
COMP613 Combinatorics and Graph Theory <i>Pre-requisite: COMP500 and MATH503</i>	S1
COMP615 Foundations of Data Science <i>Pre-requisite: COMP517</i>	S1
COMP616 Statistics for Data Science <i>Pre-requisite: MATH503</i>	S1
STAT603 Forecasting <i>Pre-requisite: MATH503</i>	S2
COMP700 Text and Vision Intelligence OR	S2
COMP701 Nature Inspired Computing	S1
COMP717 Artificial Intelligence <i>Pre-requisite: COMP500 or equivalent and 60 pts at L6</i>	S1
COMP723 Data Mining and Knowledge Engineering	S2

DIGITAL SERVICES

Major: Complete 8 courses (120 pts)

Minor: Complete INF502 + 30 pts L6 + 15 pts L7 (60 pts)

INF502 Digital Services in Information Technology	S2
COMP603 Programme Design and Construction <i>Pre-requisite: COMP503 or COMP610</i>	S1, S2
OR	
COMP607 Information Security Technologies <i>Pre-requisite: COMP501</i>	S2
INF5603 Needs Analysis, Acquisition and Training	S1
INF5604 Service Modelling	S1
INF5605 Microservices	S2
45 points from:	
COMP718 Management of Cybersecurity	S1
COMP726 Blockchain and Cryptocurrency Technology	S2
COMP728 Internet of Things and Applications (*NOT OFFERED IN 2027)	
INF5704 Service Innovation and Design	S1

NETWORKS AND CYBERSECURITY

Major: Complete 8 courses (120 pts)

Minor: Complete COMP504 + 30 pts L6 + 15 pts L7 (60 pts)

COMP504 Networks and Internet	S1, S2
COMP604 Operating Systems <i>Pre-requisite: COMP503 or COMP504</i>	S1, S2
COMP607 Information Security Technologies <i>Pre-requisite: COMP501</i>	S2
COMP609 Network and System Administration <i>Pre-requisite: COMP504</i>	S1, S2
ENEL611 Computer Network Applications <i>Pre-requisite: COMP504</i>	S1
COMP714 Advanced Network Technologies <i>Pre-requisite: COMP609</i>	S2
OR	
COMP729 Enterprise Networks <i>Pre-requisite: COMP504</i>	S2
COMP715 Network Security <i>Pre-requisite: ENEL611</i>	S2
COMP716 Highly Secure Systems <i>Pre-requisite: COMP611</i>	S1
OR	
COMP718 Management of Cybersecurity	S1

SOFTWARE DEVELOPMENT

Major: Complete 8 courses (120 pts)

Minor: Complete COMP503 + 30 pts L6 + 15 pts L7 (60 pts)

COMP503 Object Oriented Programming <i>Co-requisite: COMP500</i>	S1, S2
COMP602 Software Development Practice <i>Pre-requisite: COMP603 or COMP610</i>	S1, S2
COMP603 Programme Design and Construction <i>Pre-requisite: COMP503 or COMP610</i>	S1, S2
COMP604 Operating Systems <i>Pre-requisite: COMP503 or COMP504</i>	S1, S2
OR	
COMP611 Algorithm Design and Analysis <i>Pre-requisite: COMP610</i>	S2
COMP610 Data Structures and Algorithms <i>Pre-requisite: COMP503</i>	S1, S2
COMP713 Distributed and Mobile Systems (*NOT OFFERED IN 2027) <i>Pre-requisite: COMP611</i>	
OR	
COMP721 Web Development <i>Pre-requisite: COMP603</i>	S1
COMP719 Applied Human Computer Interaction	S1, S2
ENSE707 Software Quality Assurance <i>Pre-requisite: COMP602 or COMP612</i>	S1, S2

Game Programming pathway:

COMP612 Computer Graphics Programming (instead of COMP602) <i>Pre-requisite: MATH503 and (COMP603 or COMP610)</i>	S1, S2
COMP710 Game Programming (instead of COMP713 or COMP721) <i>Pre-requisite: COMP612</i>	S1

ARTIFICIAL INTELLIGENCE

Minor: Complete COMP517 + 15 pts L6 + 15 pts L7 + COMP717 (60 pts)

**Available as a minor only*

***Cannot be taken with Data Science major/minor*

COMP517 Data Analysis	S1, S2
COMP610 Data Structures and Algorithms <i>Pre-requisite: COMP503</i>	S1, S2
OR	
COMP613 Combinatorics and Graph Theory <i>Pre-requisite: COMP500 and MATH503</i>	S1
OR	
COMP615 Foundations of Data Science <i>Pre-requisite: COMP517</i>	S1
COMP700 Text and Vision Intelligence OR	S2
COMP701 Nature Inspired Computing	S1
COMP717 Artificial Intelligence <i>Pre-requisite: COMP500 or equivalent and 60 pts at L6</i>	S1

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