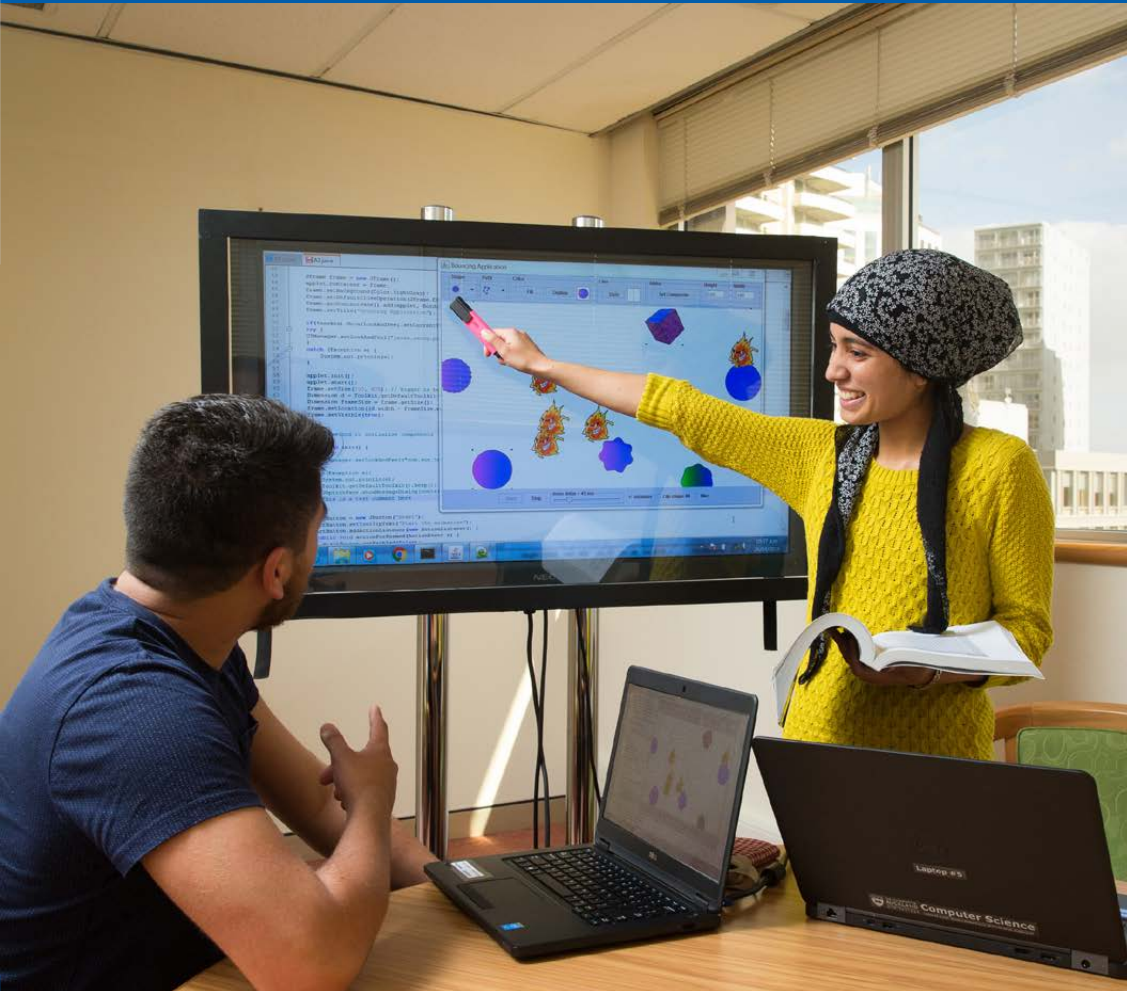


COMPUTER SCIENCE

UNDERGRADUATE HANDBOOK

2017



THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

SCIENCE

Welcome to the Department of Computer Science

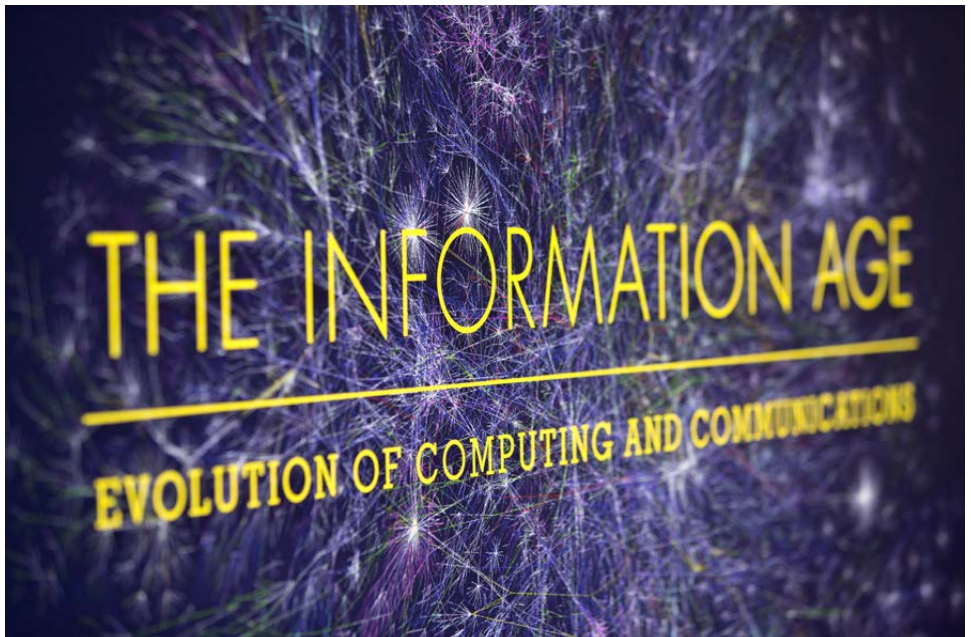


Congratulations on choosing to study Computer Science. Whether you are taking a complete programme in Computer Science, or a few courses to enhance your effectiveness in another discipline, you will be spoilt for choice in our department.

Computer scientists profoundly affect how our society advances by developing the systems which are fundamental to daily life, our work, learning

and entertainment environments. As the largest and top-ranked Computer Science department in New Zealand we offer the greatest variety of topics. We have great strengths in algorithmic information theory, artificial intelligence, bioinformatics, combinatorics, computer vision, data communications and networks, data science, distributed computing, graphics, health informatics, human-computer interaction, logic, multimedia systems, robotics, software engineering, software security, theory of computation, visual programming, and computer science education. Industry is keen to employ our graduates from the BSc and especially from our postgraduate and professional degrees. I look forward to celebrating your success in Computer Science.

PROFESSOR ROBERT AMOR
Head of Department



Bachelor of Science in Computer Science

As the demand for new technology continues to grow and change, Computer Science is always at the forefront of developments in the field. Computer Science is the study of information and computation, and of practical techniques for using machines to process information and perform computation.



3

The average number of years it takes to complete a Bachelor of Science degree



You can choose either a single or double major



Preparation for school leavers

Students are not required to have studied any sort of computing at high school. However, it would be beneficial to study NCEA Level 3 Mathematics, Physics and Digital Technologies (or equivalent).

For course planning and enrolment, go to www.science.auckland.ac.nz/student-centre
Thinking about postgraduate study options?
Visit www.cs.auckland.ac.nz/pg

Complementary majors

You may wish to consider a double major to gain a broader base of skills and knowledge.

COMPUTER SCIENCE +

Applied Mathematics
Information Systems
Logic and Computation
Mathematics
Physics
Statistics

www.science.auckland.ac.nz/doublemajors

Planning your major in Computer Science

BSc



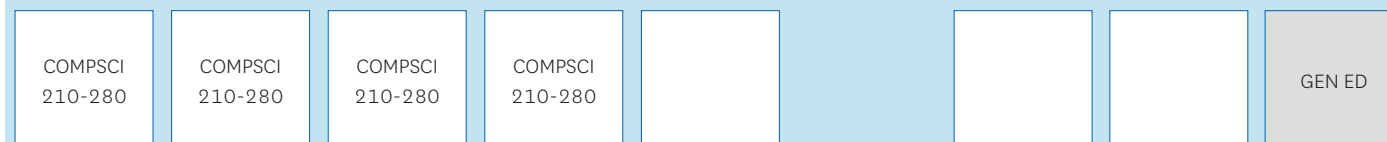
With appropriate prerequisites can also be filled by Stage II or III.

*COMPSCI 101 and 105 may be replaced with COMPSCI 107 in semester 1 if the prerequisites for COMPSCI 107 have been met.

MATHS 108, 110 or 150 are recommended courses as some Stage II COMPSCI courses require 15 points from either of these as a prerequisite.

PHYSICS 140 and COMPSCI 111 are also recommended courses.

Stage II Computer Science courses can be taken in the second semester of study if COMPSCI 107 is taken as an entry point paper.

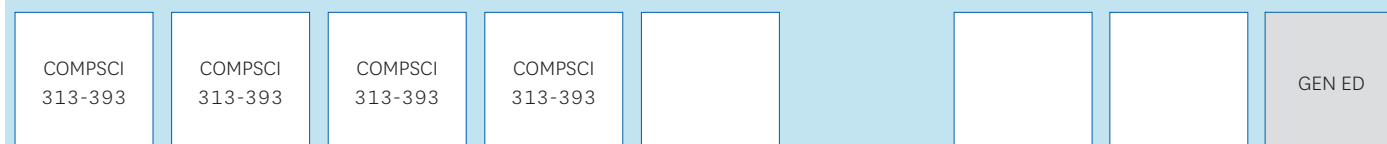


Any Stage

Note:

Stage II COMPSCI courses require a GPA of 2.0 or higher.

COMPSCI 220 requires 15 points from MATHS 108, 110, 150 or 153 as a prerequisite.



Stage III Science

Stage II or III Science

1. Courses in a minimum of three subjects listed in the BSc Schedule.
2. At least 180 points (12 courses) must be above Stage 1.
3. Up to 30 points (2 courses) may be taken from outside the Faculty.
4. 30 points (2 courses) must be taken from the appropriate General Education Schedules for BSc students.
5. At least 75 points (5 courses) must be at Stage III, of which 60 points (4 courses) must be in the majoring subject.

To view regulations for majors, and course descriptions, see www.calendar.auckland.ac.nz
 BSc degree requires: 360 points (24 x 15 point courses). Each box represents one 15 point course.
 It is recommended that students enrol in 8 courses each year.

Degree Planners for double majors can be found at www.science.auckland.ac.nz/course-planning



Undergraduate Computer Science Courses

Stage I

		Semester
COMPSCI 111	An Introduction to Practical Computing	SS, S1, S2
COMPSCI 101	Principles of Programming	SS, S1, S2
COMPSCI 105	Principles of Computer Science	SS, S1, S2
COMPSCI 107	Computer Science Fundamentals	S1

Stage II

COMPSCI 210	Computer Systems 1	S1, S2
COMPSCI 215	Computer Systems 2	S1
COMPSCI 220	Algorithms and Data Structures	S1, S2
COMPSCI 225	Discrete Structures in Mathematics and Computer Science	S1, S2
COMPSCI 230	Programming Techniques	S1, S2
COMPSCI 280	Introduction to Software Development	S2

Stage III

COMPSCI 313	Computer Organisation	S2
COMPSCI 314	Modern Data Communications	S2
COMPSCI 320	Applied Algorithmics	S2
COMPSCI 335	Distributed Objects, Services and Programming	S2
COMPSCI 340	Operating Systems	S2
COMPSCI 345	Human-Computer Interaction	S1
COMPSCI 350	Mathematical Foundations of Computer Science	S1
COMPSCI 351	Fundamentals of Database Systems	S1
COMPSCI 367	Artificial Intelligence	S2
COMPSCI 369	Computational Science	S1
COMPSCI 373	Computer Graphics and Image Processing	S1
COMPSCI 380	Undergraduate Project in Computer Science	SS, S1, S2

For course descriptions and prerequisite information, go to www.cs.auckland.ac.nz/courses

Careers in Computer Science

Computer Science graduates can find careers in an ever-widening variety of industries and roles.

Analyst/Programmer

Application Developer/Programmer

Behaviour Engineer

Business Systems Manager

Computer Assisted Assessment Developer

Computer Coder

Developer

ESRI Intermediate Developer

GIS Technician/Planning Assistant

ICT Technician

IT Analyst

IT/Communications Executive

Junior Test Analyst

Lab Technician

Net Developer

Senior Applications Engineer

Senior SQL Developer

Software Analyst Software Development

Software Developer

Software Engineer

Technical Analyst

Technician

User Interface Developer



Disclaimer

Although every reasonable effort is made to ensure accuracy, the information in this document is provided as a general guide only for students and is subject to alteration. All students enrolling at the University of Auckland must consult its official document, the University of Auckland Calendar, to ensure that they are aware of and comply with all regulations, requirements and policies.



"I am interested in computational science, using computers to do cutting-edge scientific research. More specifically, I focus on computational evolutionary biology. This involves describing evolutionary theories as mathematical models and developing computer software to test these models"

"I'm enjoying learning from several excellent lecturers and professors in the department. Not only are they knowledgeable and enthusiastic about the topics that they teach, I can always ask questions about concepts I'm confused about or topics that I want to find out more about and receive helpful and interesting answers."

Arman Bilge is studying a Bachelor of Science majoring in Computer Science and Mathematics.



Helpful information

Academic dates	www.auckland.ac.nz/dates
Academic Integrity Course	www.auckland.ac.nz/academic-integrity
Accommodation	www.accommodation.auckland.ac.nz
Buy coursebooks	www.ubsbooks.co.nz
Career Development and Employment Services	www.auckland.ac.nz/careers
Course advice and degree planning in Science	www.science.auckland.ac.nz/student-centre
General education	www.auckland.ac.nz/generaleducation
How to apply	www.apply.auckland.ac.nz
How to enrol	www.auckland.ac.nz/enrolment
International students	www.international.auckland.ac.nz
Māori and Pacific students	www.science.auckland.ac.nz/tuakana
Need help?	www.askauckland.ac.nz
Rainbow Science Network for LGBTI students	www.science.auckland.ac.nz/rainbowsience
Scholarships and awards	www.scholarships.auckland.ac.nz
Support for students	www.science.auckland.ac.nz/support

Applications close on December 8.

Questions about computer science? Email office@cs.auckland.ac.nz



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