

# Computer Science in specialisations and other programmes

You don't have to major in Computer Science to take Computer Science courses. You can also take them as part of the following specialisations in the Bachelor of Science:

- Information Systems
- Logic and Computation
- Bioinformatics
- Electronics and Computing

The definition of a specialisation is a coherent group of related courses from different subjects. You can take a specialisation as a major, or you can take it as a double major along with Computer Science.

Computer Science and related computing courses also form the basis for these programmes:

- Bachelor of Technology in Information Technology
- Bachelor of Engineering in Software Engineering
- Bachelor of Science conjoint with a major in Computer Science and/or Information Systems

## Information Systems

The Information Systems specialisation is designed for students who would like to study the applications of computing in business. It will prepare you for an IT position within the commercial sector.

If you are taking Information Systems a single major, you must include the following courses in your programme:

- 15 points: ACCTG 101
- 60 points from COMPSCI 210–280
- 45 points: INFOSYS 220, 222, 224
- 30 points: COMPSCI 313–379
- 30 points: INFOSYS 320–341, 343, 344
- 15 points: 300 level Science course that could be COMPSCI or INFOSYS

**Note:** INFOSYS 110 and INFOSYS 280 are not part of this specialisation. It is also not recommended to include COMPSCI 280.



The Information Systems specialisation can be taken together with a major in Computer Science. This is a popular double major.

If you do plan to take the double major, Information Systems must be the first major and Computer Science, the second. You must take the following:

- 15 points: ACCTG 101
- 60 points from COMPSCI 210–280
- 45 points: INFOSYS 220, 222, 224
- 30 points from COMPSCI 313–379
- 30 points from INFOSYS 320–341, 343, 344 for the INFOSYS first major
- 45 further points from COMPSCI 313–379 for the COMPSCI second major

If you do plan to take a double major with some other Science subject (that is not Computer Science) and Information Systems as your second major, you must take the following for the INFOSYS major:

- 15 points: ACCTG 101
- 45 points from COMPSCI 210–280
- 45 points: INFOSYS 220, 222, 224
- at least 30 points from COMPSCI 313–379
- at least 15 points from INFOSYS 320–341, 343, 344

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**[www.science.auckland.ac.nz/uoa/of-information-systems](http://www.science.auckland.ac.nz/uoa/of-information-systems)**

## Logic and Computation

Logic and Computation is about symbolic systems used by humans and computers. It applies ideas and techniques from Computer Science, Philosophy, Mathematics and Linguistics to relate the structure of symbolic representation in human thought and computer software.

If you are interested in this unique and exciting combination of Computer Science, Philosophy, Mathematics and Linguistics, you should choose from the following courses:

- 60 points: COMPSCI 101, 225, PHIL 101, 222
- 60 points from COMPSCI 320, 350, 367, LINGUIST 300, 313, 320, LOGICOMP 301, 302, MATHS 315, 326, 328, PHIL 305, 315, 323
- 15 further points from COMPSCI 105, 220, 320, 350, 367, LINGUIST 100, 103, 200, 300, 313, 320, LOGICOMP 201, 301, 302, MATHS 150, 250, 253, 255, 315, 326, 328, PHIL 105, 216, 222, 305, 315, 323

This programme is also available as a major to Arts students.

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**[www.science.auckland.ac.nz/uoa/of-logic-and-computation](http://www.science.auckland.ac.nz/uoa/of-logic-and-computation)**

## Bioinformatics

The Bioinformatics specialisation combines aspects of Molecular Biology, Computer Science, Statistics and Mathematics. It was created in response to the rapid changes in the way modern biological and biomedical research is conducted. Bioinformatics is the development and application of computational methods in Biology, Biotechnology, and Medicine. It takes advantage of rapidly expanding databases, including those related to biodiversity, genomics, proteomics, and structural biology.

The specialisation must include:

- 15 points: COMPSCI 220
- 30 points: BIOINF 301, COMPSCI 369
- 15 points from BIOSCI 322, 350, 351, 353, 354, 356, MEDSCI 314

- 45 points from COMPSCI 314, 320, 335, 345, 351, 367, 373, MATHS 270, 326, 328, 340, 361, 362, 363, STATS 301, 302, 310, 320, 325, 330, 341, 351, 380

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[www.science.auckland.ac.nz/uoq/of-bioinformatics](http://www.science.auckland.ac.nz/uoq/of-bioinformatics)

## Electronics and Computing

The BSc in Electronics and Computing is designed for students who are interested in both the hardware and software aspects of modern

computer technology. You will learn about both analogue and digital electronics, and become experienced with computer operation and applications.

The specialisation must include

- 45 points at Stage II in Computer Science or Mathematics
- 30 points: PHYSICS 340, 390
- 15 points from PHYSICS 315-391, GEOPHYSICS 330-331
- 15 points at Stage III in Computer Science

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***Cindy Ma** is studying for a conjoint Bachelor of Commerce, majoring in Accounting, and Bachelor of Science, double majoring in Computer Science and Information Systems. **Matthew Cornish** is doing a Bachelor of Science double majoring in Computer Science and Electronics and Computing. The robot is taking part in studies in Artificial Intelligence and Human-Computer Interaction.*