OTAGO POLYTECHNIC
Te Kura Matatini ki Otago

Auckland International Campus
In partnership with Future Skills Academy

Bachelor of Information Technology

Location
Auckland International Campus
This programme is also offered at our Dunedin Campus. Visit op.ac.nz for programme details.

Level
7

Start
February, April, July and October

Duration
Three years full-time

Apply by
Until start date

Delivery
On campus with a major industry-based project for an external client during year three.

Credits
360

APPLY

International fee
$26,572 per year

*Fees are approximate, subject to change and exchange rates

Information Technology skills are needed everywhere.

IT is problem solving. Trouble shooting. Critical thinking. Creating. Designing. Building. It's working alone or working with people.

This is an applied degree so you'll learn by doing. You'll gain the skills and practical knowledge to go straight into a job when you graduate.

This programme is offered by Future Skills Academy due to a sub-contract arrangement with Otago Polytechnic.

Why study IT at Otago Polytechnic?

Practical skills

Learn what Information Technology professionals do through hands-on and practical work. Build the communication skills you need to work effectively in the industry.

First year covers a broad general knowledge of IT. Key topics come up again through the year, and you'll address them with more depth each time as you learn more and understand more.

For second and third year you can focus on an area that interests you most:

- Software development
- IT infrastructure and operations
- Network engineering
- Alternative digital platforms (hardware, IoT, etc.)

Courses include Databases, Automation and Robotics, Mobile App Development, Advanced Networking, UX Engineering, Game Development, AI and Data Science, and the Internet of Things and Cloud Development. There's even the option of doing a course from a programme outside of the BIT!

Have fun

Study in a creative, innovative and supportive environment. With small class sizes, you'll receive plenty of one-on-one attention from your experienced lecturers.

Get work ready

Our graduates jump into a range of jobs in the industry as we teach you what employers want. Our grads enjoy jobs such as Web Developer, Systems Administrator, Software Developer, Programmer, Business Analyst, Database Administrator or Computing Services Manager.

You will study

The Bachelor of Information Technology degree is a broad-based programme providing an introduction to most areas of IT. A standard learner pathway will consist of:

- eight compulsory Level 5 courses in your first year
- two compulsory Level 6 studio courses and six Level 6 elective courses in your second year

- two compulsory Level 7 studio courses and five Level 7 elective courses (plus one other 15 credit course from Level 5, 6 or 7) in your third year.

Variations of this are possible. You could replace a Level 6 course with a Level 7, and the 15 additional credits can be drawn from courses outside the BIT using unspecified credits.

Year one - Level 5 courses

Course name Credits What will I learn?

Programming 1

15

Learn about concepts of program design and programming fundamentals.

Programming 2

15

Build event-driven, GUI (Graphical User Interface) applications using pre-built controls. Be introduced to the theoretical issues involved in Object-Oriented analysis, design and programming, and the principles of correct design and implementation for applications of this type.

Fundamentals of Web Development

15

Use basic technologies for the development of web-based functionality. Learn components of web pages and client/server web communication. Develop simple web-based applications using industry relevant client/server-side programming languages. Use industry-relevant tools and workflows to develop web-based applications.

Introduction to Networks

15

Learn about fundamental networking concepts and technologies, by covering the basics of network theory and the skills needed to implement a simple network.

Devices and Platforms

15

Learn to use a range of devices, platforms and concepts utilised within the Information Technology industry.

Maths for IT

15

Learn about the mathematical concepts and methods that underpin and are directly applicable to the theory of information systems. This course is primarily sited within the field of discrete mathematics.

Year One Special Topic

15

Pursue an individual course that will focus in-depth on a particular aspect of IT.

Studio 1

15

Learn the fundamentals of professionalism in a technical environment.

Studio 2

15

Be introduced to user-centric and technical project planning techniques to create solutions to simple IT problems.

Unspecified credits

15

This course is intended to act as a repository for "unspecified credits" where you can undertake courses from outside the BIT.

Year two - Level 6 courses

Course name Credits What will I learn?

Databases 2

15

Learn the fundamentals of relational database theory and how to design, build and use a database on a modern database management system.

Switching, Routing and Wireless Essentials

15

Learn how to describe the architecture, components, and operations of routers and switches in a small network and to configure a router and a switch for basic functionality.

Operating Systems Concepts

15

Learn about the major components of operating systems and the basic organisation of computer systems.

Embedded Systems

15

Be introduced to the core principles of computer hardware and architecture and become acquainted with a range of embedded application contexts.

Automation and Robotics

15

Use microprocessors and sensors to build mobile, context-aware robots. Learn to programme classic robotic behaviours and add wireless communication to explore basic swarm algorithms.

Year Two Special Topic

15

Carry out semi-independent exploration into a specific IT topic.

Studio 3

15

Use an industry-relevant project management approach to produce simple, functional group outputs.

Studio 4

15

Produce a professional, high-quality group project, following industry-relevant quality assurance and ethical practices.

Introductory Application Development (Dev3)

15

Learn the concepts of application development, including algorithms, data structures and design patterns required to use a simple, industry-relevant development framework.

Intermediate Application Development (Dev4)

15

Extend the concepts of application development, including algorithms, data structures and design patterns required to use complex, industry-relevant frameworks or libraries.

Operations Engineering 1

15

Gain the knowledge and hands-on skills to perform systems administration tasks securely within different computing platforms, using the command line interface.

Unspecified credits

15

This course is intended to act as a repository for "unspecified credits" where you can undertake courses from outside the BIT.

Year three - Level 7 courses

Course name Credits What will I learn?

Studio 5

15

Apply technical skills within complex Information Technology projects. Extend professional behaviour through group work, professional development activities and external engagement.

Studio 6

15

Extend your skills within a complex IT project.

Developing Flexible IT Courses

15

Prepares students for the training role that is often performed by information technology professionals.

Databases 3

15

Gain the skills and understanding necessary to design and implement enterprise databases and to administer database management systems. Use a range of tools and platforms for developing large databases and explore current areas of research in database implementation, use and management.

Advanced Algorithms

15

Use a wide variety of advanced algorithms and tools to develop efficient solutions to complex computational problems.

Operations Engineering 2

15

Look at, and practice the configuration, management and troubleshooting of systems within an enterprise network including aspects of both applications and operating system components.

Administering a Virtual Infrastructure

15

An in-depth knowledge and techniques used to efficiently implement, optimise and troubleshoot a virtual infrastructure.

Mobile Application Development

15

Explore the design and implementation of applications for mobile devices.

Advanced Networking

15

Provides students with an understanding of how to evaluate and apply advanced networking protocols, services and concepts to the design, deployment and maintenance of medium to large scale networks.

Year Three Special Topic

15

Carry out an independent exploration into a specific IT topic.

UX Engineering

15

Build on your front-end development skills to design and build screens with inclusive, flexible and sound user experience.

Security

15

Gain the theoretical knowledge and technical skills in the field of information security. Learn to identify security threats and vulnerabilities, then mitigate them by implementing robust, industry-accepted solutions.

AI and Data Science

15

Choose and deploy the appropriate machine intelligence tool to solve problems that demand a cognitive component. For example: computer vision, natural language processing, recommendation systems, data analytics, anomaly detection, conversational agents (ie chatbots), machine translation, autonomous navigation, robotic control etc.

Advanced Application Development Concepts

15

Build and deploy optimised and efficient applications using a range of advanced industry tools and frameworks.

Quality Assurance and Software Testing

15

Lay the foundation for a potential craeer in the information technology field as a software tester. Understand the fundamental principles and processes of software testing.

Enterprise Networking, Security and Automation

15

Understand and apply knowledge of architectures and considerations related to designing, securing, operating and trouble shooting enterprise scale networks.

Game Development

15

Apply game programming techniques and tools to develop an effective game.

Internet of Things and Cloud Computing

15

Investigate and analyse the applicability of an IoT solution for a real-world problem and develop an IoT application involving cloud computing.

Business Analysis and Intelligence

15

Apply the theories, methods and tools for analysing business processes, and propose solutions for a variety of organisational problems.

Unspecified credits

15

This course is intended to act as a repository for "unspecified credits" where you can undertake courses from outside the BIT.

Your workload

You will be expected to spend about 300 hours per study block on your course work. This includes both scheduled class time and self-directed study. Some of these hours may be spent in a workplace gaining hands-on experience and developing important industry and business connections.

Further study options

This qualification is widely recognised, allowing you to apply for entry to postgraduate study in IT. You will be qualified to apply for graduate teacher training programmes, leading to a career in Information Technology secondary education.

Entry requirements

- NCEA Level 3
- 14 credits at **Level 3 or above** in each of three NZQA approved university entrance subjects, **and**
- 10 Literacy credits at **Level 2 or above**, made up of:
  - 5 credits in reading and 5 credits in writing, **and**
- 10 Numeracy credits at **Level 1 or above**, made up of:
  - specified achievement standards available through a range of subjects **OR**
  - package of three numeracy unit standards (26623, 26626, 26627- **all** three required).

COVID-19 adjustments to NCEA requirements

- If you completed your NCEA Level 3 during 2020, you only need 12 credits per Level 3 subject (i.e. a total of 36 credits).
- If you completed your NCEA Level 3 during 2021, please visit **this page on the NZQA website**. There are different adjustments depending upon which part of New Zealand you studied in.
- **OR** the **New Zealand Certificate in Study and Employment Pathways (Level 4)**, or equivalent.
- Discretionary entry may be given to applicants over 20 who do not hold the above requirements (you will need to undertake an interview).
- Possible interview at time of selection.
- **If English is not your first language, you must provide**:
  - New Zealand University Entrance **OR**
  - Overall Academic IELTS 6.0 with no individual band score lower than 5.5 (achieved in **one** test completed in the last two years), **OR**
  - Acceptable alternative evidence of the required IELTS (**see here for NZQA proficiency table** and **here for list of recognised proficiency tests**).

Selection process

All eligible applicants will be accepted unless the number of applications exceeds the available places (as indicated by the Bachelor of Information Technology Team Leader). In this case, applicants will be interviewed and ranked according to the professional judgement of the admissions panel on the basis of the candidate's likelihood to succeed in the Information Technology industry.

Additional costs

There are no additional costs associated with this programme.

Links to useful websites

Connect with Computing and IT students, graduates and staff on our **Facebook page**.

Equipment

You will need to have your own computer. We recommend a Windows-based PC, as most software applications are compatible with Windows rather than Apple Mac. Students with a Mac PC may spend a lot of time fixing issues related to applications which are not highly compatible with Mac.

Minimum System Requirements:

- CPU: Intel Core i5 or higher
- RAM: 8 GB minimum
- Hard Disk: 256 GB minimum

New students will be required to set up their OP account and network access during the orientation and before the beginning of their classes. They must have their device ready before the first session.

Cancellation of a programme

Any programme of study, course or course occurrence may be cancelled or postponed where there are insufficient numbers. As far as is practically possible, we avoid cancelling or making other significant changes less than two weeks before the programme starts (or five working days for short courses). If this happens, we will do our best to suggest alternative study options for you. If you don't want to do the alternative programme, we will give you a full refund. For international students, if a programme change affects your visa status, we will let you know and support you to find an alternative option. We also advise Immigration New Zealand of any programme change that will affect international students.