Graduate Certificate in Information Technology (Level 7)

Location

Dunedin

Duration

16 weeks full-time; 12-18 months part-time

Delivery

On campus

Credits

60

DescLevel

60

Intakes

February and July

Apply

Until start date
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Do you have a degree in a subject other than information technology and want to develop your computing skills? Or perhaps you are an IT graduate looking to increase your

knowledge in specialist areas?

Either way, this flexible IT programme is the perfect solution and is ideal if you want to study alongside full-time employment.

Technology is everywhere. To have a grounding in tech and how computers work is an advantage in every industry but essential if you’re looking for a career in IT. There are currently far more IT jobs than there are graduates and employers are desperate for work ready grads. Career possibilities include business computing, technical support, hardware, software, database, web development and much more!

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.

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 want employers want! You can also choose a custom pathway so you can focus on gaining skills in the areas you want to.

You will study

To successfully achieve this programme, you'll need to complete 60 credits at Level 5 or above with a minimum 45 credits at Level 7 or above. Studio 6 is a compulsory course for everyone.

The flexibility of the programme design means there will inevitably be a range of customised pathways. Please make an appointment with the Programme Leader to discuss customised pathways for your study. Email info@op.ac.nz or call 0800 762 786.

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.

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.

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

While the Graduate Certificate Programme is the equivalent of one semester of full time study, course pre-requisites and schedules make it unlikely that this will be the preferred mode of learning. Therefore, you have the opportunity to complete this qualification part-time over two or three semesters, according to your personal path of study.

Further study options

Enhance your employment potential with postgraduate study in Information Technology within New Zealand.

Entry requirements

- An undergraduate qualification in computing or a related discipline OR degree-equivalent practical, professional or scholarly experience.
- 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).

If you need to improve your English Language skills, we offer a wide range of English programmes.

Selection process

The professional judgement of academic staff will be used to determine those applicants who meet the entry criteria. Eligible applicants will be accepted into the programme when an appropriate, coherent programme of study is agreed by the Graduate Certificate Team Leader. The Team Leader may require applicants to undertake specific papers as pre-requisites to papers in this qualification.

Want your existing skills recognised?

If you have extensive knowledge and skills due to practical experience in this area, enquire about our recognition of prior learning process at Capable NZ. You may have already gained credits towards this qualification.

Additional costs

There are no additional costs associated with this programme.

Programme specific risks

You are advised of any specific risks involved in particular areas via course information and these risks may also be discussed during orientation.

Student loans/allowances

Student loans and allowances are for domestic students only. For information about student loans and allowances please visit the Studylink website. It is important to apply for your student loan/allowance at the same time as you apply for this programme, due to the length of time Studylink take to process. Loan/allowance applications can be cancelled at any time if you decide to withdraw your programme application or if it is unsuccessful.

Intakes:

Course	Description	Dates
25-DUN-S1	Dunedin	17 Feb 2025

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