Computing & Information Technology

Te Ara Hangarau Matihiko

2027

STUDY GUIDE

- Computing (General IT)
- Cybersecurity
- Data Engineering
- IT Technical Support
- Network Engineering
- Software Engineering

GET SET

Ara

ara.ac.nz

KIA ORA

Choosing what comes next can feel exciting, daunting and full of pressure — but it's also full of possibility.

We believe education should open doors, build confidence and lead somewhere meaningful. That's why our learning is grounded in the real world: practical, hands-on and shaped by industry, so you graduate ready to step into work, further study or whatever future you're aiming for.

More than a qualification, study is about finding people who support you, discovering what you're capable of and building a life that feels right for you. With flexible study options, supportive tutors and a welcoming community, we give you the space to learn in a way that suits you and a place to achieve success, your way.

SUCCESS ISN'T
ONE-SIZE-FITS-ALL.

AT ARA,
SUCCESS IS SHAPED
AROUND YOU.

YOUR GOALS,
YOUR PACE,
YOUR LIFE.

**SUCCESS.
YOUR WAY.**

COMPUTING (GENERAL IT)

Computing and information technology (IT) is the field behind the phones, apps, games and online services people rely on, and the systems that keep organisations and infrastructure running. IT professionals design and build software, connect devices through networks, manage and protect data, and keep systems secure and reliable.

They troubleshoot faults, improve performance, and document decisions so teams can support systems over time. Because every sector uses technology, computing skills can lead to work in settings as varied as healthcare, education, finance, logistics and government.

Would this suit me?

This area could suit you if you like solving problems and working out how different parts fit together. It helps to be patient, methodical and willing to test ideas when the answer isn't obvious straight away. Strong communication is useful too, because IT work often involves supporting others and working as part of a team.

WHAT will I learn?*

- Core computing concepts and digital systems
- Technical support and troubleshooting approaches
- Networking and systems fundamentals
- Platforms, infrastructure and systems configuration
- Security-aware thinking and risk basics
- Data handling and database foundations
- Service management and customer-focused support
- Professional communication and clear documentation

*Varies depending on chosen course

HOW will I learn?*

- Hands-on labs in our TechLabs and specialist facilities
- Simulated enterprise environments and realistic scenarios
- Applied tasks, configurations and troubleshooting practice
- Team projects with documentation and presentations
- Networking labs aligned with Cisco Networking Academy

*Varies depending on chosen course

Industry connections

Ara's computing and IT programmes are shaped by industry expectations, with input from industry partners. You'll work on applied projects that reflect real systems, users and constraints, with opportunities to present solutions and documentation. Learning is supported by guest speakers, off-site visits where appropriate and ongoing connection with professional bodies such as IT Professionals NZ.

Computing (General IT, entry level) study options

	LEVEL	LOCATION	DURATION	INTAKES	NOTES
New Zealand Certificate in Study and Employment Pathways (ICT pathway)*	3 / 4	Christchurch	Full-time 19 weeks Part-time available	February, July	Preparation for higher level study in IT
New Zealand Certificate in IT Essentials	4	Christchurch	Full-time 6 months Part-time available	February, July	Broad introduction to IT

**If you don't meet the academic requirements for the IT Essentials certificate, you can gain them via the Level 3 option of this foundation course.*

Computing (General IT, advanced) study options

	LEVEL	LOCATION	DURATION	INTAKES	NOTES
Bachelor of Information and Communication Technologies (General)	7	Christchurch	Full-time 3 years Part-time up to 5 years	February, July	Covers all areas of IT with option to add a 6-month specialty
Graduate Diploma in Information and Communication Technologies	7	Christchurch	Full-time 1 year Part-time available	February, July	Open to anyone with any degree

If you don't meet the academic requirements for the degree, you can gain them via the Level 4 option of the ICT pathway listed above. Please note: completing the pathway course doesn't guarantee entry to the higher-level programme as other criteria may apply.

Scan for more information on this subject

CYBERSECURITY

Cybersecurity is the practice of protecting computer systems, networks and data from digital threats. It focuses on preventing unauthorised access, reducing risk and responding effectively when security incidents occur. People working in this field monitor systems, identify vulnerabilities and put safeguards in place to keep information safe.

Cybersecurity plays a critical role across business, government and community organisations, where trust, privacy and system reliability matter. As technology becomes more connected, cybersecurity professionals help ensure digital services remain secure, resilient and reliable.

Would this suit me?

Cybersecurity could suit you if you like solving puzzles and thinking a few steps ahead. It helps if you're patient, careful with details and comfortable troubleshooting when things don't work first time. You don't need to know everything already, but you do need curiosity about how systems, people and processes fit together.

Career Pathways

Entry Level

- IT support assistant
- Service desk analyst
- Junior security support technician
- Security operations centre (SOC) assistant
- Compliance support coordinator

Intermediate

- Cybersecurity analyst
- SOC analyst
- Incident response analyst
- GRC analyst (governance, risk, compliance)
- Junior security engineer

Advanced

- Security architect
- Penetration tester
- Threat intelligence specialist
- Cybersecurity consultant
- Security operations manager

NB: Intermediate and advanced roles may require experience and/or further study.

WHAT will I learn?

- Cyber threats, vulnerabilities and attack methods
- Security principles and security-aware thinking
- Network and system hardening basics
- Identity and access management fundamentals
- Monitoring, logging and incident response
- Risk, policy and governance essentials
- Secure configuration, testing and troubleshooting
- Professional documentation and communication practices

HOW will I learn?

- Hands-on labs in controlled network environments
- Realistic scenarios and troubleshooting exercises
- Project work that mirrors workplace output
- Work-integrated learning project, possibly with placement
- Group activities, teamwork and presentations

Industry connections

Cybersecurity study at Ara is shaped by ongoing industry input to keep learning aligned with current practice. You'll benefit from guest speakers, applied projects and work-integrated learning opportunities that reflect real security challenges. Learning takes place in industry-standard lab environments, helping you to build practical skills, professional judgement and confidence working with systems like those used in the workplace.

Study options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Diploma in Cybersecurity	6	Christchurch	Full-time 1 year Part-time up to 3 years	February, July
Graduate Diploma in Information and Communication Technologies	7	Christchurch	Full-time 1 year Part-time available	February, July

Starter options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Certificate in Study and Employment Pathways (Open pathway)*	4	Christchurch	Full-time 19 weeks Part-time available	February, July

**If you don't meet the academic requirements for the diploma, you can gain them via this starter course. Please note: completing the starter course doesn't guarantee entry to the higher-level qualification as other criteria may apply.*

Scan for more information on this subject

DATA ENGINEERING

Data engineering is the work of designing and running the systems that collect, store and deliver data securely for analysis. Data engineers build reliable pipelines at scale that move data from apps, sensors and business systems into databases or cloud platforms. They clean, validate and transform data so it's consistent, secure and ready for reporting, dashboards and machine learning. The role sits between software development and analytics, focusing on performance, automation and data quality so organisations can make confident, data-driven decisions.

Would this suit me?

Data engineering could suit you if you enjoy solving problems and spotting patterns. If you like building practical systems, working carefully with detail and asking 'why does this happen?', it could be for you. It helps to be curious, patient and comfortable testing, fixing and improving things with others. You don't need to be a maths whiz.

Career Pathways

Entry Level

- Junior data analyst
- Data technician
- Reporting analyst
- Data support assistant
- Junior business intelligence analyst

Intermediate

- Data engineer
- Business intelligence developer
- Analytics engineer
- Data warehouse developer
- Data platform engineer
- Data solutions consultant

Advanced

- Lead data engineer
- Principal data engineer
- Data architect
- Data engineering manager
- Head of data and analytics
- Data governance lead

NB: Advanced roles may require experience and/or further study.

WHAT will I learn?

- Data engineering fundamentals
- Database design and advanced databases
- Data pipelines and modern data infrastructure
- Cloud computing and distributed systems
- Working with large, complex databases
- Data transformation and analysis
- Artificial intelligence and machine learning basics
- Data governance, ethics and Māori data sovereignty
- AI and cybersecurity fundamentals

HOW will I learn?

- Hands-on labs in our computing labs
- Guided practice with real datasets
- Cloud-based tools and data platforms
- Presentations, peer feedback and guest speakers
- Team projects reflecting workplace workflows
- Capstone project with a real organisation

Industry connections

Data Engineering at Ara is shaped by industry practice. You'll take part in applied projects, including a significant capstone project linked to a real organisation, with feedback and input from industry panel members. Guest speakers and industry contacts help keep learning current and work-focused. You'll also build practical skills in industry-standard labs and tools that reflect modern data environments.

Study options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Certificate in IT Essentials	4	Christchurch	Full-time 6 months Part-time available	February, July
New Zealand Diploma in Information and Technology (Technical Support)^	5	Christchurch	Full-time 1 year Part-time up to 3 years	February, July
Bachelor of Information and Communication Technologies (Data Engineering)	7	Christchurch	Full-time 3 years Part-time up to five years	February, July
Graduate Diploma in Information and Communication Technologies	7	Christchurch	Full-time 1 year Part-time available	February, July

^This qualification can be cross-credited into the Bachelor of Information and Communication Technologies.

Starter options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Certificate in Study and Employment Pathways (Open pathway)*	4	Christchurch	Full-time 19 weeks Part-time available	February, July

**If you don't meet the academic requirements for the degree, you can gain them via this starter course. Please note: completing the starter course doesn't guarantee entry to the higher-level qualification as other criteria may apply.*

Scan for more information on this subject

IT TECHNICAL SUPPORT

IT technical support keeps people and organisations working. Specialists in this area of IT set up, maintain and fix computers, devices, operating systems, applications and networks. They respond to user issues, diagnose faults, apply secure fixes and document what was done so systems stay reliable and problems don't repeat. The work can also include basic networking services, security awareness and database fundamentals.

Would this suit me?

This area could suit you if you like solving practical problems and helping people. You'll do well if you're curious about how computers and networks work, patient when issues take time to track down and you can explain steps in plain language. Being reliable and detail-focused helps too.

Career Pathways

Entry Level

- IT support technician
- Service desk analyst
- Desktop support technician
- Computer technician
- Application support analyst

Intermediate

- Systems support technician
- Network support technician
- Junior systems administrator
- Junior network administrator
- Field service technician

Advanced

- Systems administrator
- Network administrator
- Network engineer
- Infrastructure engineer
- IT operations analyst
- Technical support team lead

NB: Advanced roles may require experience and/or further study.

WHAT will I learn?

- Hardware and software installation and configuration
- Operating systems administration and troubleshooting
- Networking fundamentals and common services
- Security-aware troubleshooting and access control
- Database basics, backups and recovery
- IT service management and customer support skills
- Web and software design fundamentals
- Professional, legal and ethical practice

HOW will I learn?

- Hands-on labs
- Network simulations and practical configurations
- Customer service simulations
- Realistic troubleshooting tasks and scenarios
- Projects with documentation and presentations
- Guided support that builds independence

Industry connections

You'll learn in industry-standard TechLabs and dedicated Cisco labs, using tools and network environments that mirror real workplace setups. Teaching is shaped by regular input from industry, including contact with professional bodies. Guest speakers and industry-informed learning tasks help you practise troubleshooting, documentation and customer support the way employers expect.

Study options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Diploma in Information and Technology (Technical Support)^	5	Christchurch	Full-time 1 year Part-time up to 3 years	February, July

^This qualification can be cross-credited into the Bachelor of Information and Communication Technologies.

Starter options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Certificate in Study and Employment Pathways (Open pathway)*	3	Christchurch	Full-time 19 weeks Part-time available	February, July

**If you don't meet the academic requirements for the diploma, you can gain them via this starter course. Please note: completing the starter course doesn't guarantee entry to the higher-level qualification as other criteria may apply.*

Scan for more information on this subject

NETWORK ENGINEERING

Network engineering is the backbone of modern connectivity, keeping organisations, systems and people connected. This field focuses on designing, building and maintaining secure, reliable networks that support communication between devices, servers and cloud services. It encompasses areas such as network infrastructure, Wi-Fi management, performance monitoring, fault diagnosis and system upgrades. Security is a core consideration, with measures put in place to control access and reduce risk. These capabilities are essential to the operation of organisations across almost every industry.

Would this suit me?

Network engineering could suit you if you like practical problem-solving and enjoy working step by step when things break. You need to be curious about how systems connect, patient with troubleshooting and comfortable following processes. It also helps to communicate clearly, document what you do and work well in a team.

Career Pathways

Entry Level

- IT support technician
- Service desk analyst
- Network support technician
- Systems support technician
- Junior network administrator

Intermediate

- Network administrator
- Network engineer
- Infrastructure engineer
- Systems administrator
- Network operations analyst
- Managed services technician

Advanced

- Senior network engineer
- Network architect
- Cloud network engineer
- Infrastructure lead
- Network operations manager
- Security-focused network engineer

NB: Advanced roles may require experience and/or further study.

WHAT will I learn?

- Network fundamentals and protocols
- Routing and switching concepts
- Wireless network design basics
- Infrastructure and systems fundamentals
- Security-aware networking practices
- Troubleshooting and fault diagnosis
- Documentation and professional communication
- Service and support practices
- AI and cybersecurity fundamentals

HOW will I learn?

- Hands-on labs in controlled environments
- Network simulations and configuration activities
- Realistic troubleshooting scenarios
- Team-based tasks and projects
- Industry-linked, capstone-style projects
- Guest speakers and off-site visits

Industry connections

You'll learn in industry-standard TechLabs and dedicated Cisco labs, with training aligned to the Cisco Networking Academy. Learning activities reflect real workplace tasks: configuring, testing and troubleshooting in controlled network environments.

Guest speakers, site visits and input from industry and professional bodies such as IT Professionals NZ help keep learning current. A significant capstone project lets you apply your skills to a real organisation's needs.

Study options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Certificate in IT Essentials	4	Christchurch	Full-time 6 months Part-time available	February, July
New Zealand Diploma in Information and Technology (Technical Support)^	5	Christchurch	Full-time 1 year Part-time up to 3 years	February, July
Bachelor of Information and Communication Technologies (Network Engineering and Infrastructure)	7	Christchurch	Full-time 3 years Part-time up to five years	February, July
Graduate Diploma in Information and Communication Technologies	7	Christchurch	Full-time 1 year Part-time available	February, July

^This qualification can be cross-credited into the Bachelor of Information and Communication Technologies.

Starter options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Certificate in Study and Employment Pathways (Open pathway)*	4	Christchurch	Full-time 19 weeks Part-time available	February, July

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SOFTWARE ENGINEERING

Software engineering focuses on designing, building and maintaining reliable software systems. Software engineers turn requirements into working applications by writing code, testing and debugging, improving performance and keeping security in mind. Work often involves collaborating in teams, using version control, documenting decisions and working through incomplete information or changing priorities.

Software engineering supports almost every industry, from health and finance to retail and logistics. Professionals in this field can contribute across the software lifecycle, including development, testing and application support.

Would this suit me?

Software engineering could suit you if you enjoy solving problems, spotting patterns and improving how things work. You'll also need to enjoy experimenting, learning from mistakes and building step by step. It helps to be curious, patient and willing to collaborate, because software is usually created and maintained in teams.

Career Pathways

Entry Level

- Graduate software engineer
- Junior software developer
- Junior web developer
- Software tester
- Quality assurance assistant
- Application support analyst

Intermediate

- Software developer
- Full stack developer
- Mobile app developer
- Test analyst
- Systems analyst
- DevOps engineer

Advanced

- Senior software engineer
- Technical lead
- Solutions architect
- Engineering manager
- Principal software engineer
- Site reliability engineer

NB: Advanced roles may require experience and/or further study.

WHAT will I learn?

- Programming fundamentals and software engineering practices
- Web and application development techniques
- User-centred design and usability basics
- Database design and data handling
- Testing, debugging and quality assurance
- Security-aware development and risk thinking
- Version control and collaborative workflows
- Professional communication and clear documentation
- AI and cybersecurity fundamentals

HOW will I learn?

- Hands-on labs in TechLabs and studios
- Practical projects that build real solutions
- Team-based work, code reviews, presentations
- Simulated workplace scenarios and troubleshooting tasks
- Capstone project for a real organisation

Industry connections

Industry input shapes what and how you learn at Ara, helping ensure skills are relevant and practical. You'll hear from guest speakers across the IT sector and work on applied projects, including a significant capstone project for a real organisation. Learning takes place in industry-standard labs that reflect real environments, building your confidence with tools, teamwork and professional practice.

Study options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Certificate in IT Essentials	4	Christchurch	Full-time 6 months Part-time available	February, July
New Zealand Diploma in Information and Technology (Technical Support)^	5	Christchurch	Full-time 1 year Part-time up to 3 years	February, July
Bachelor of Information and Communication Technologies (Software Engineering)	7	Christchurch	Full-time 3 years Part-time up to five years	February, July
Graduate Diploma in Information and Communication Technologies	7	Christchurch	Full-time 1 year Part-time available	February, July

^This qualification can be cross-credited into the Bachelor of Information and Communication Technologies.

Starter options

	LEVEL	LOCATION	DURATION	INTAKES
New Zealand Certificate in Study and Employment Pathways (Open pathway)*	4	Christchurch	Full-time 19 weeks Part-time available	February, July

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Scan for more information on this subject

APPLY NOW
ara.ac.nz

City campus
130 Madras Street, Christchurch
Mon-Fri, 8am - 4.30pm

Manawa campus
276 Antigua Street, Christchurch
Mon-Fri, 8.30am - 4.30pm

Woolston campus
Ensors Road, Christchurch
Mon-Fri, 8am - 4.30pm

Timaru campus
32 Arthur Street, Timaru
Mon-Fri, 8am - 4.30pm

Connect with us:

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