NZSE

IT Software Development

Auckland CBD
nzse.ac.nz | 0800 99 88 11

Information Technology

Take your opportunity to drive the future success of New Zealand in technology. Go further with a fulfilling career in IT - start here, go anywhere.

**NZ Certificate in Information Technology Essentials
(Level 4)
17 weeks**

**NZ Diploma in Information Technology Technical Support
(Level 5)
1 academic year**

NZ Diploma in Networking (Level 6) 1 academic year	**Diploma in Information Technology Software Development (Level 6)** 2 academic years
Bachelor of Computer and Information Sciences (AUT)*	**Bachelor of Information Sciences (Massey University)***
Master of Computer and Information Sciences (AUT)*	**Master of Information Sciences (Massey University)***

*Conditions apply - go to our website or get in contact with us to discuss

AUT UNIVERSITY

AUT is the second largest university in New Zealand with campuses serving major parts of Auckland and an specialised high-performance sports institute. AUT has an excellent reputation for design, science, technology and research and has tech facilities that rival industry those in industry.

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

For more than 80 years, Massey University has helped shape the lives and communities of people in New Zealand and the world through its forward-thinking spirit, teaching, and research led methodology.

Our Industry Partners

vodafone   SKY   yellow   Microsoft   FUJITSU   dimension data   slingshot   orcon

NZSE is a Category One NZQA accredited tertiary provider with 4 campuses across Auckland and Hamilton.

Whatever career path you choose at NZSE, you will get the benefits of practical experience, industry connections and internationally recognised qualifications. Our General Studies programmes offers a high level of practical learning and industry connections to enter varying employment opportunities in the business, retail, security and hospitality sector.

Career Services at New Zealand School of Education

Our vision is to support you in unlocking your career potential. We do this by helping you navigate your education and career journey through:

- One-on-one career coaching
- CV and interview skills workshop
- Engagement with employers and guest speakers
- Support with securing work experience and volunteering opportunities
- Support with securing part and full-time employment

Diploma in Information Technology Software Development (Level 6)

Duration   2 academic years
Campus   Auckland CBD
Credits   285 credits

Learn the fundamentals of information systems, hardware infrastructure and software development, user applications and communication. Dive deeper into theory and practice on coding applications, database, methodologies and paradigms, and how these systems are used to support business practices.
This programme embeds the New Zealand Certificate in Information Technology (Level 5) and the New Zealand Diploma of Software Development (Level 6).

Entry Requirements

· A computing certificate in Level 5 or equivalent knowledge, skills and experience OR overseas high school certificate

What Will I Learn?

· ICT Technical Infrastructure
· Introduction to Programming and Database
· ICT in Business
· ICT in Society
· Programming 1
· Programming 2
· Interface Design and User Experience
· IT Project Management
· Logical Database Design
· Physical Database Design

· Program Design and Construction
· Software Testing
· Software Development Practice
· Business and Process Modelling
· IT Service Provision
· Mobile and App Development
· Game Programming
· Communication Skills*
· Mathematical Concepts*
· Computer Network Principles*

*University Pathway Strand Courses

International Certifications

This programme prepares students towards the following certification:
· Microsoft Technology Associate Developer
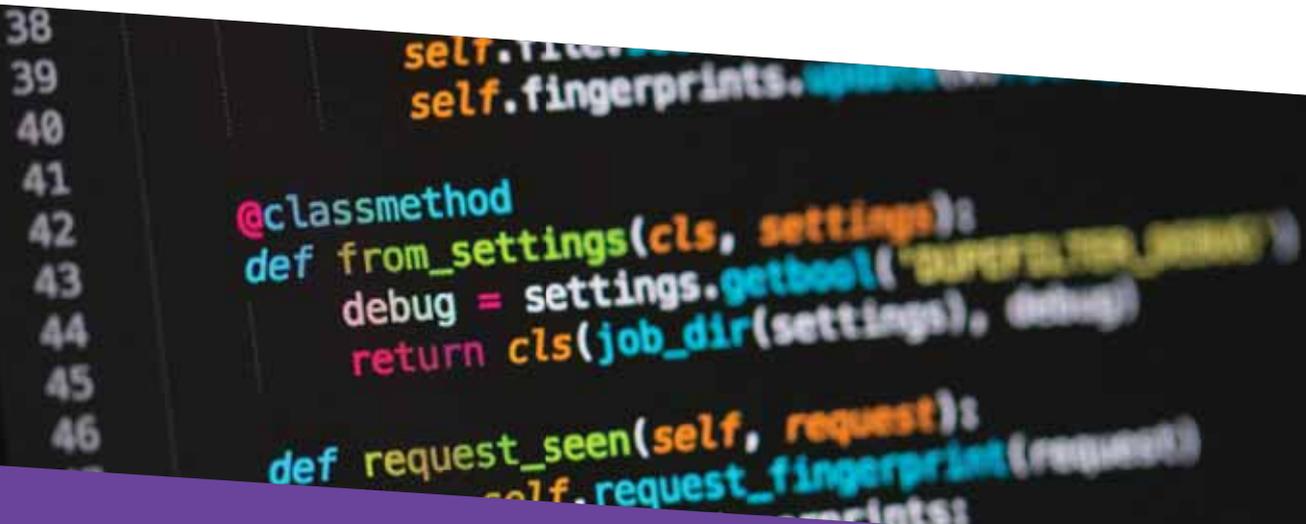
What's Next?

Study Further
· Bachelor of Computer and Information Sciences (AUT)**
· Bachelor of Information Sciences (Massey University)**

Get Employed
· Software Tester
· Front End Developer
· Back End Developer
· DevOps Engineer (Entry Level)

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Course Descriptors

ICT Technical Infrastructure (15 credits)

- Provides an introduction to IT infrastructure concepts in order to enable students to understand computer systems architecture for effective configuration and use. Concepts of single user, multi-user, and centralised operating systems are covered, along with applications and end-user computing.

Introduction to Programming and Database (15 credits)

- To provide students with the basic and intermediate knowledge of programming and database. Basic understanding of concepts and application of Object Oriented Programming techniques, the software development life-cycle, principles of software engineering, development of software solutions for business applications including file handling and graphical interface applications, concepts and organization of databases, design and creation of simple relational databases, SQL.

ICT in Business (15 credits)

- To provide students with an understanding of how information systems are used to support business. Students will learn about the legal, and ethical issues that impact on the provision of Information Technology services and systems. Internet services and methods for protecting organisational data and systems together with practices for ensuring business continuity will be covered. Students will apply design principles in the creation of media and websites.

ICT in Society (15 credits)

- Provides a wide-ranging, multidisciplinary introduction to the evolution and application of increasingly complex and powerful computer systems (and other forms of digital technology) with particular emphasis on their impact on society.

Programming 1 (15 credits)

- An introduction to the basics of computer programming to equip students for a career in any branch of IT, the sciences, data analysis or engineering. The fundamentals of writing, designing and testing programs will be developed.

Programming 2 (15 credits)

- Introduces the process of program design and implementation using object-oriented programming, with particular emphasis on applications from Computer Science and engineering technology.

Interface Design and User Experience (15 credits)

- Provides students with the understanding of the principles involved in designing interfaces that are attractive, easy to use and meet the needs of different users.

IT Project Management (15 credits)

- Provides students with the core competencies of project management in an information technology context. A range of IT project management methodologies and approaches are compared. Some proven practices and supporting tools and techniques are further investigated, particularly with regard to planning, monitoring, estimating and implementing. Expected standards of professionalism and ethics will be highlighted.

Logical Database Design (15 credits)

- Produce a conceptual data model for a given set of requirements. Develop a logical database design for a given set of requirements and for a given conceptual design. Implement a physical database design from a given logical design. Build and test a database application containing forms and reports that demonstrates understanding of how business needs can be met by interaction with a given database. Database design and development: taking unstructured data normalising it, creating and implementing a database design. Advanced SQL using MySQL Concepts associated with multi-user databases will be covered, including distributed database architectures, transaction management, concurrency control, security and back-up and recovery.

Physical Database Design (15 credits)

- Covers database design from a performance perspective. Presents a complete view of the Database Design process from Requirements Analysis to Database Deployment on an actual Database server. Issues such as Data Storage, Security, Concurrency Control, Query Optimisation, Access Paths, Application Tuning and Data Warehousing are covered in depth. Overall, the course develops the ability to deal with the technical aspects of database administration in an enterprise scale database system.

Program Design and Construction (15 credits)

- An introduction to the design and construction of Object-Oriented software. It will extend individual design and programming skills developed in earlier programming courses, with an emphasis on the quality, modularity, and re-usability of the software developed. The course will introduce current techniques used in software development that allow the goals of software development projects to be realised.

Software Testing (15 credits)

- Students will apply testing and quality assurance methods and techniques in the development of ICT solutions.

Software Development Practice (15 credits)

- Extends individual software development skills into a team environment. Students are exposed to common and emergent practices in the field and introduced to a range of tools that support development processes and practices.

Business and Process Modelling (15 credits)

- Provides an insight into the Object Oriented paradigm and methods of data and process modelling. Building on the broader context of Software, Information and Systems Engineering, contemporary methods used in analysis and design are covered and the techniques used to produce optimised models of data and processes are detailed.

IT Service Provision (15 credits)

- Provides an introduction to IT Service Science and its role in the development and provision of high quality IT services. The foundations of high quality services are covered, including standard procedures, techniques and tools. Students will gain IT service and operations orientated skills.

Optional: Mobile and App Development (15 credits)

- Investigates the design and implementation of distributed systems, including contemporary technologies such as Java Enterprise Edition and .NET, as well as the development of mobile systems.

Optional: Game Programming (15 credits)

- A practical foundation in game programming, using a variety of game development tools and programming libraries, and deploying games on a variety of platforms.

University Pathway Strand Courses (New Zealand Diploma in Software Development, Level 6)

- Communication Skills (15 credits)
- Mathematical Concepts (15 credits)
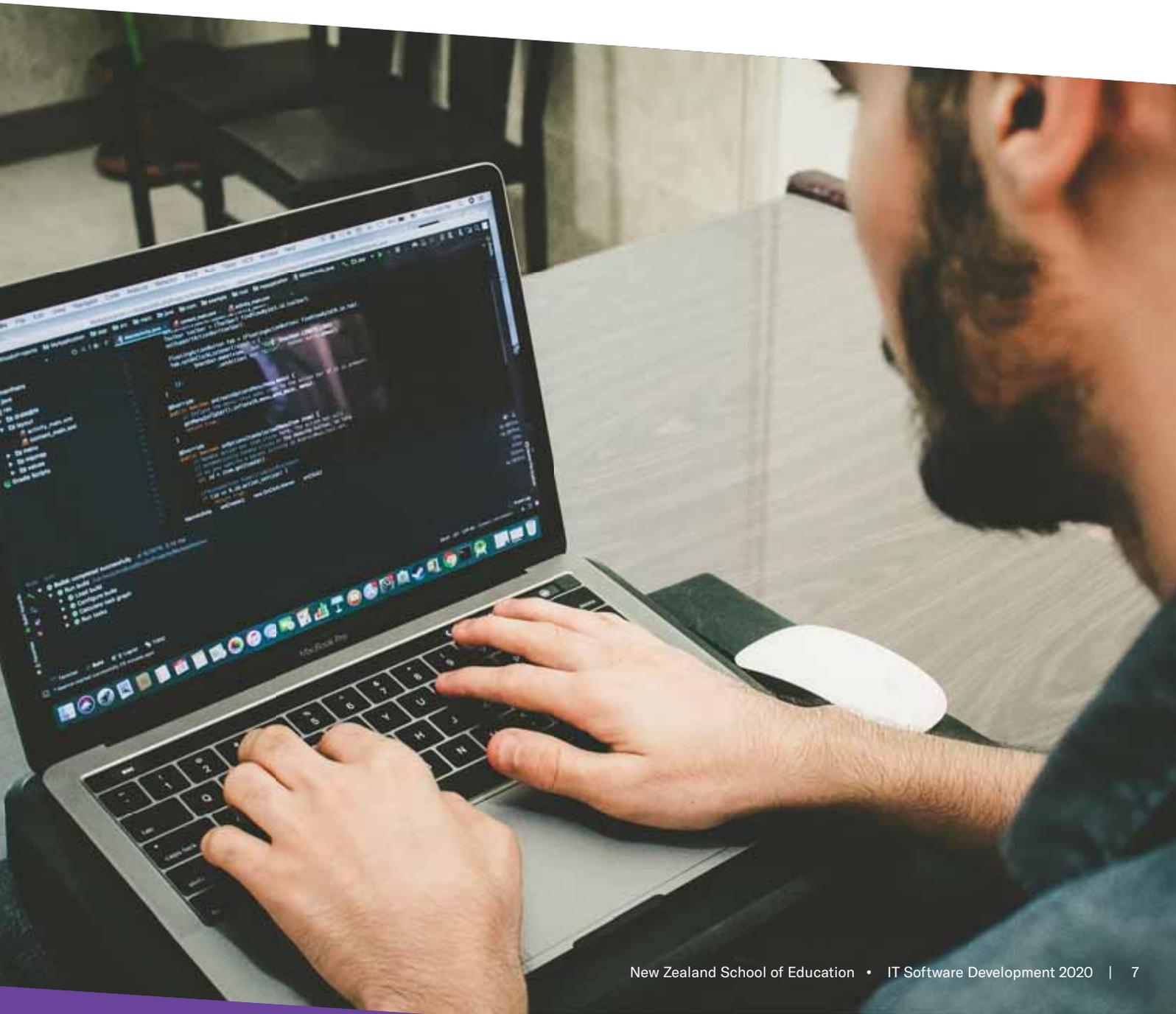- Computer Network Principles (15 credits)

"My study with NZSE was practical and fun and allowed me to transition into a Bachelor of Computer and Information Science degree at AUT University that I completed in just two and a half years."

Jia Lu
AUT PhD Candidate
AUT Master in Computer and Information Sciences
Graduate of Diploma in IT Software Development (Level 6)

AUCKLAND CBD CAMPUS

Level 7 and 8, 238-242 Queen Street
CBD, Auckland
New Zealand

WEST AUCKLAND CAMPUS

3033 Great North Road
New Lynn, Auckland
New Zealand

SOUTH AUCKLAND CAMPUS

5A Ryan Place
Manukau, Auckland
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HAMILTON CAMPUS

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