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Course Information

SCHOOL OF INFORMATION COMMUNICATION TECHNOLOGY



WELCOME
TO VISION
SCHOOL
OF ICT

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WEB DEVELOPMENT & DESIGN



Course Overview

This Level 5 Diploma is new in New Zealand and focuses on designing and developing websites, from conceptual to full featured websites that interact with databases

In just under one year you will have studied E-commerce, Graphics, WWW Protocols, HTML and CSS. Starting with an introduction to HTML and cascading style sheets, through to using Javascript, server-side processing (ASP.NET and PHP) and building dynamic websites with SQL databases. The course is taught with a hands-on approach and includes real-world projects. Throughout the year our students are encouraged to build a portfolio of several clients, with our tutors always available to help discuss standard industry pricing and relationship building. There are exciting and lucrative opportunities throughout the world for web developers.

Course Snapshot

Qualification:	Diploma in Web Development and Design
Level:	5
Length:	1 year
Study Options:	Fulltime
Locations:	Auckland, Hamilton & Christchurch
Intakes:	Hamilton and Christchurch: Semester A Auckland: Semester A & B

This programme is offered pending NZQA and TEC approval

“The skills I learnt at Vision have helped me build websites properly and professionally”

Jason Lerke

Programme Content

WEB PROGRAMMING AND INTERFACE ANALYSIS AND DESIGN

AIMS

- Develop skills in web programming using web tools.
- Use a mark-up language to transmit data between a server and web application.
- Use a scripting language to allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed.
- Provide students with the skills to analyse and evaluate client requirements, design user interfaces, use principles of design, and select appropriate graphics editor and web technology framework.

CONTENT

- Analysis process including stakeholder interaction and feasibility study.
- Documentation of application business processes using modelling tools.

- Understanding the structure of a web project.
- Ux implementation including user interface (UI) and universal accessibility.
- Client side scripting, eg, JavaScript, Cascading style sheets (CSS) and HTML.
- Introduction to web services and appropriate framework and security concerns by using framework plugins.
- Test driven development, develop unit tested applications.

CONTENT MANAGEMENT SYSTEMS AND FRAMEWORKS

AIMS

- Build websites powered by a content management system (CMS).

CONTENT

- Install a CMS locally in your computer.
- Introduction to a CMS like WordPress and how to use it. Practice in editing content, managing media and customizing with plugins and themes.
- Determine how people are able to add, edit or view content, defining user roles.



IT SUPPORT

AIMS

Students will gain the knowledge required to assemble components based on customer requirements, install, configure and maintain devices, PCs and software for end users, understand the basics of networking and security/forensics, properly and safely diagnose, resolve and document common hardware and software issues while applying troubleshooting skills. Students will also provide appropriate customer support; apply the basics of virtualization, desktop imaging, and deployment.

CONTENT

- Installation and configuration of systems and application software.
- Hardware and software diagnostic testing, maintenance, technical and customer support, across a range of devices.
- Foundation networking including internet concepts.
- Installation and configuration of hardware resources – PCs, laptops, mobile and other devices.
- Supporting end user requirements.
- Security concepts, tools and techniques.

DATABASE DESIGN AND INTEGRATION

AIMS

- Introduce the concepts and fundamentals of database system (DB) and database management system (DBMS).
- Students will use a Data Access Service as well as an Object Relational Mapping Framework to connect their databases to their programs and build applications utilising those connections.
- By using database design and relational concepts, and mastering a range of analysis methodologies, students will develop a wide range of specialised technical skills.



“I didn’t just learn how to build websites – I got some valuable tips about how to build a business and manage customers as well.”

Jess McCarthy





CONTENT

- Business concepts, organisational context and impact of IT on business – understand functions, structure and cultural context of business.
- Database – data modelling; design and create a simple database (multiple tables) with user function.
- Data manipulation from a web form, insert, update, delete from the web form, and manage multiple web forms with databases.

INTRODUCTION TO SOFTWARE PROGRAMMING

AIMS

To equip students with an introductory knowledge of a programming language and sound programming practices. Students will be able to design basic programs given a set of requirements for data modelling and then to translate this design into code.

CONTENT

- Programming concepts and tools.
- Awareness of procedural and object-oriented programming (OOP).
- Server side scripting, eg, PHP, SQL, ASP.NET, which does not undermine security.
- Programmes to include core logic and mathematical concepts such as problem solving methods, critical thinking, abstract reasoning and system thinking.

SOFTWARE TESTING AND SECURITY

AIMS

- An introduction to the concepts and principles of software validation and verification techniques that are normally involved in the software testing process, including industry standards and available tools.

- See software testing as one of the important components of quality assurance of products and services.
- Produce user documentation and training material.
- Compliance with relevant legislation, industry codes of practices, and codes of conduct; (e.g. IITP, health and safety, contract management).
- Treaty of Waitangi.

CONTENT

- Software Testing fundamentals which include verification and validation, quality control.
- Perform testing and maintenance in accordance with software development paradigm.
- Carrying out functional testing of applications in multiple user environments, with combination of software and devices.
- Measuring usability and compliance standards.
- Client acceptance process for a project.
- User training and documentation.
- Accessibility and equity issues facing IT.
- Communication, information design skills, report and technical writing.
- Oral and visual presentations.
- Research literacy, referencing, report writing and documentation.
- Technical documentation.
- Personal and interpersonal skills, including teamwork, customer service.
- Relationship management and conflict resolution.
- Interviewing skills, eg, to determine client requirements.

PROFESSIONAL PRACTICE

AIMS

To provide students with the knowledge to apply professional, legal and ethical principles and practices in a socially responsible manner, and apply communication, personal and interpersonal skills relevant to IT roles.

CONTENT

- Professional, sustainable, socially responsible and ethical principles; ethical work.
- Compliance with legal, regulatory, privacy and security responsibilities.

Entry Requirements

- Be a minimum age of 17 years old* and have four years secondary education, or be aged over 20
- Be able to demonstrate strong computer skills and may be required to complete an aptitude test
- Have Year 11 or Form 5 Mathematics (or equivalent)
- Have an interview
- Applicants whose first language is not English will be interviewed to assess their level of English competency and may be required to complete a placement indicator test
- International students must have an IELTS score of 5.5 with no band score under 5 or a recognised equivalent test

** International students must be at least 18 years old*

Graduate Stories

“The Vision course definitely helped me do what I do now, which is to build clean and professional websites.”

Jason Lerke



Jason Lerke

“The support I got from Vision gave me the confidence to find freelance work fairly quickly after I finished the course.

My tutor helped me get fee paying clients and also helped me work out what I should be charging. Giving freelancing a shot was definitely one of the biggest highlights in my early working career. I got to work for clients all over New Zealand and in the United States.”

Jason completed the Diploma in Web Development and Design at the Vision Hamilton campus straight after finishing high school. The year-long course equipped him to secure regular work as a freelance web developer before entering an award-winning online marketing company and now gets paid to attend international industry conferences.

He says, “The skills I learnt at Vision have helped me build websites properly and professionally. I learnt the basics at high school and was building very basic HTML websites as a hobby before I enrolled at Vision. I discovered that I quite enjoyed doing website development at school and started to get

quite passionate about it. Vision equipped me to use more programming languages so I could customise sites for clients and make them more easily editable. The tutors helped me every step of the way.”

Now as a fulltime member of the over 45-strong Hamilton-based WebSpringteam, which is part of the NetValue Group. WebSpring services clients in Australasia and the USA, Jason says,

“The job I have now is a perfect role for me. I get given opportunities to grow where I want to grow and to keep my skills fresh by attending industry conferences, like Webstock. In 2011 I even went to Adobe MAX in Los Angeles as part of my job and in 2012 I went to Strangeloop in St Louis. I couldn’t really ask for a better job.”

“The Vision course definitely helped me do what I do now, which is to build clean and professional websites.

Working with an actual client in the final part of the diploma gave me a good appreciation of what I needed to do to be a professional website developer. Based on what I learnt I would definitely recommend the Vision web development course.”

Jess Taylor-McCarthy

A year's training at Vision enabled Jess Taylor-McCarthy to progress from having strong computer skills but knowing very little about building websites, to launching her own web design business, Mawhai Web Design.



Jess completed the Diploma in Web Development and Design in 2012 to get the skills she needed to eventually build a home business. Jess learnt enough in the one year course to immediately launch her own business as soon as she finished, and start building websites for clients.

"I went into the course with almost no knowledge of web development. I had excellent computer skills and could search the internet but I knew nothing about how to create a website.

The course taught me how to build websites and provided a good grounding for me to develop further knowledge and branch into more specialist fields if I want to."

Jess's goal when she started the course was to eventually move her young family to the country and generate an income from home, doing something creative. She is already enjoying taking on fee paying clients and expressing her creativity, and can easily relocate her business to a more remote area if she wants to.

She says, "It's really satisfying building a website for a client and seeing it go live. All I have to do is put a URL into a browser and I can see what I've created. So far I've been able to exceed client expectations, which feels really good. My clients are really, really happy with the job I've done. Their feedback has been very positive." Jess enjoyed studying at the Vision Hamilton campus.

"I didn't just learn how to build websites – I got some valuable tips about how to build a business and manage customers as well.

The Vision course gave me some good tips about how to work with clients and manage their expectations around outcomes and costs."

Adam Joyce

Studying at Vision gave Adam Joyce the skills and confidence he needed to secure a dream job doing web development work for clients throughout Australasia.

Adam completed the Diploma in Web Development and Design at the Vision Hamilton campus and is now working fulltime developing iPhone and Android apps, building websites, and doing Windows programming.

Adams current employment for a software development company is the second 'dream job' he has enjoyed since graduating from Vision. His first job was building web based administration systems and he went on from there to build large scale commercial applications, including invoice management systems, social media websites, helpdesk systems and other e-commerce systems.

He says,

"From a web design point of view you are pretty well sorted by the time you finish the Vision diploma.

It gives you a very good understanding of web design, a really good kick start in programming and a good knowledge of how things work in all areas that are related to what you will be doing. The practical assignment at the end of the course was good preparation for similar projects and gave me the technical skills and experience I needed to feel confident that I knew what to do - and that's what got me employed."

Adam found studying at Vision to be a rewarding career investment and he encourages other people wanting to be trained in web development to consider doing the same course.

He says,

"The course is really practical and specific. The teaching material is always up-to-date and the software is always the latest and the best so you are using exactly what you are going to be using in the real world. You get a lot out of it for just one year."

SOFTWARE ENGINEERING & DESIGN



Course Overview

We can train you to take advantage of one of the biggest waves of growth happening in the IT sector.

The mobile app market has taken the world by storm. Apple launched the first app market mid-2008. In 2010 mobile apps generated \$5 billion in sales. By 2016 annual revenue is predicted to grow to \$74 billion!

It's not just the mobile app market that is booming. New Zealand's software development industry is hungry for programmers with regular media reports about the shortage of software developers. Research from the Ministry of Business, Innovation and Employment also states that software graduates are in high demand.

Our Diploma in Software Engineering & Design will prepare you for the rapidly changing programming industry. You will begin with learning traditional programming techniques and swiftly move to the latest industry standards. We teach through hands-on learning so you will learn to create a range of software applications during the course, including mobile applications.

The course also includes a 'Final Project' where you will work with a real client (where possible). Starting with the client's initial instructions you will analyse, design and build a working program which meets your client's specifications. Get trained now in our one year diploma and jump into this thriving industry.

Course Snapshot

Qualification:	Diploma in Software Engineering & Design
Level:	6
Length:	1 year
Study Options:	Fulltime
Locations:	Hamilton & Christchurch
Intakes:	Hamilton and Christchurch: Semester A

Programme Content

It Support

Aim:

Students will gain the knowledge required to assemble components based on customer requirements, install, configure and maintain devices, PCs and software for end users, understand the basics of networking and security/forensics, properly and safely diagnose, resolve and document common hardware and software issues while applying troubleshooting skills. Students will also provide appropriate customer support; apply the basics of virtualization, desktop imaging, and deployment.

Content:

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- Installation and configuration of hardware resources – PCs, laptops, mobile and other devices
- Supporting end user requirements
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Database Design and Integration

Aim:

- Introduce the concepts and fundamentals of database system (DB) and database management system (DBMS).
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Introduction to Software Programming

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- Programmes to include core logic and mathematical concepts such as problem solving methods, critical thinking, abstract reasoning and system thinking

Software Testing and Security

Aim:

- An introduction to the concepts and principles of software validation and verification techniques that are normally involved in the software testing process, including industry standards and available tools.
- See software testing as one of the important components of quality assurance of products and services.
- Produce user documentation and training material.

Content:

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- Perform testing and maintenance in accordance with software development paradigm
- Carrying out functional testing of applications in multiple user environments, with combination of software and devices
- Measuring usability and compliance standards
- Client acceptance process for a project
- User training and documentation

Professional Practice

Aim:

To provide students with the knowledge to apply professional, legal and ethical principles and practices in a socially responsible manner, and apply communication, personal and interpersonal skills relevant to IT roles.

Content:

- Professional, sustainable, socially responsible and ethical principles; ethical work
- Compliance with legal, regulatory, privacy and security responsibilities
- Compliance with relevant legislation, industry codes of practices, and codes of conduct; (e.g. IITP, health and safety, contract management)
- Treaty of Waitangi
- Accessibility and equity issues facing IT
- Communication, information design skills, report and technical writing
- Oral and visual presentations
- Research literacy, referencing, report writing and documentation
- Technical documentation
- Personal and interpersonal skills, including teamwork, customer service
- Relationship management and conflict resolution
- Interviewing skills, eg, to determine client requirements



Visual Basic.NET and C#.NET

.NET Framework 4.5 Windows Applications

- Windows Forms Applications using Visual Studio 2012
- Windows Services
- Computer Storage and Data Types
- Decision, Data and Repetition Structures, and Structure Diagrams
 - Loops and Recursion
 - Arrays and Multi-Dimensional Arrays
- Error Handling
- Operators and Control Flow
- Methods and Parameters

Theory and Techniques of Object-Oriented Programming

- Inheritance
- Polymorphism
- Encapsulation
- Interfaces

Databases

SQL Management Studio 2012 ADO.NET

- Relational Database Management Systems (RDMS)
- Database query methods
- Database connection methods
- Setting up SQL Server
- Creating a data connection
- Creating a parameterized query
- Connect using SQL Connection Class

LINQ

- Connect to and Retrieve Data From a SQL Database Using LINQ

Mobile Phone Development

Using Visual Basic for Android

- API Interfaces
- SQLite databases
- SD card operations
- How to open a webpage with WebView
- Read / write files
- Online database communication system
- GPS and the Net SQL: Record your position online
- Geolocation using XML
- Text to speech
- Interacting with the SMS messaging system
- Service and activity modules
- Voice recognition in SMS messages program
- Maps – Hashmap for Java, Hashtables for .NET
- Android with JSON
- And more...

ASP.NET & MVC4

- Web Programming in C#
- Database Programming in C# with SQL

Final Project

- Major project by the student in a real environment

Learning Objectives

Databases

Explain ethics and professionalism for the computer industry in New Zealand

Ethics

Demonstrate computer programming skills using a third generation language

Software Development

Demonstrate an understanding of computer software development life cycles

Software Project Planning

Apply the principles of project planning and control

Project

Plan and manage a project in the computer field

Source File Management

Manage software development source files

3GL Programming

Demonstrate computer programming skills using a third generation language

3GL Programming in a GUI Environment

Apply the principles of creating a computer programme using a 3GUI environment

Object Oriented Programming

Demonstrate computer programming skills using an object-orientated language

Data Analysis

Apply the principles of data analysis for computer systems

Systems Analysis

Apply the principles of system analysis using a structured methodology

Data Storage Methods

Demonstrate knowledge of computer data types and data structures

Applications

- Plan and develop a simple Android app
- Plan and develop an advanced Database driven web accessible Android app



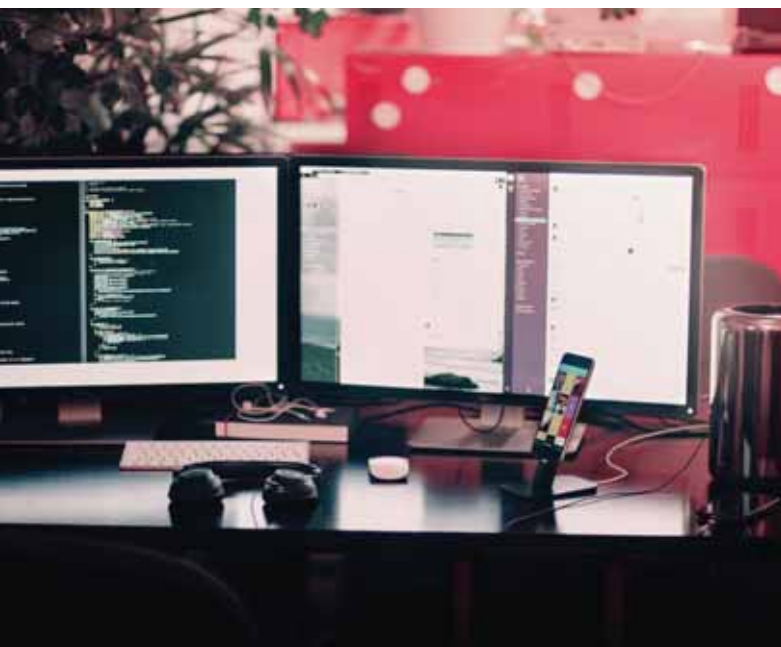
Entry Requirements

- Be a minimum age of 17* years old and have NCEA Level 2 (equivalent to four years secondary education), or be aged over 20
- Have a National Certificate in Computing (Level 3) or be able to demonstrate strong computer skills (You may be required to complete an aptitude test)
- Have Year 11 (Form 5) Mathematics (or equivalent)
- Have an interview
- Applicants whose first language is not English will be interviewed to assess their level of English competency and may be required to complete a placement indicator test
- International students must have an academic IELTS score of 6.0 with no band score under 5.5 or a recognised equivalent test

** International students must be at least 18 years old*







For more info
FREEPHONE
0800 834 834

txt your name to
027 557 8839, or email
enquiries@visioncollege.ac.nz

www.vision.ac.nz

Freephone 0800 834 834

Auckland

25a Springs Road, East Tamaki
Auckland 2013, New Zealand
Tel: 09 215 0184 Fax: 07 853 0223
Email: auckland@visioncollege.ac.nz

Hamilton

21 Ruakura Road
Hamilton 3216, New Zealand
Tel: 07 853 0777 Fax: 07 853 0223
Email: hamilton@visioncollege.ac.nz

Christchurch

50 Hazeldean Road, Addington
Christchurch 8024, New Zealand
Tel: 03 377 2364 Fax: 03 366 9271
Email: christchurch@visioncollege.ac.nz

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