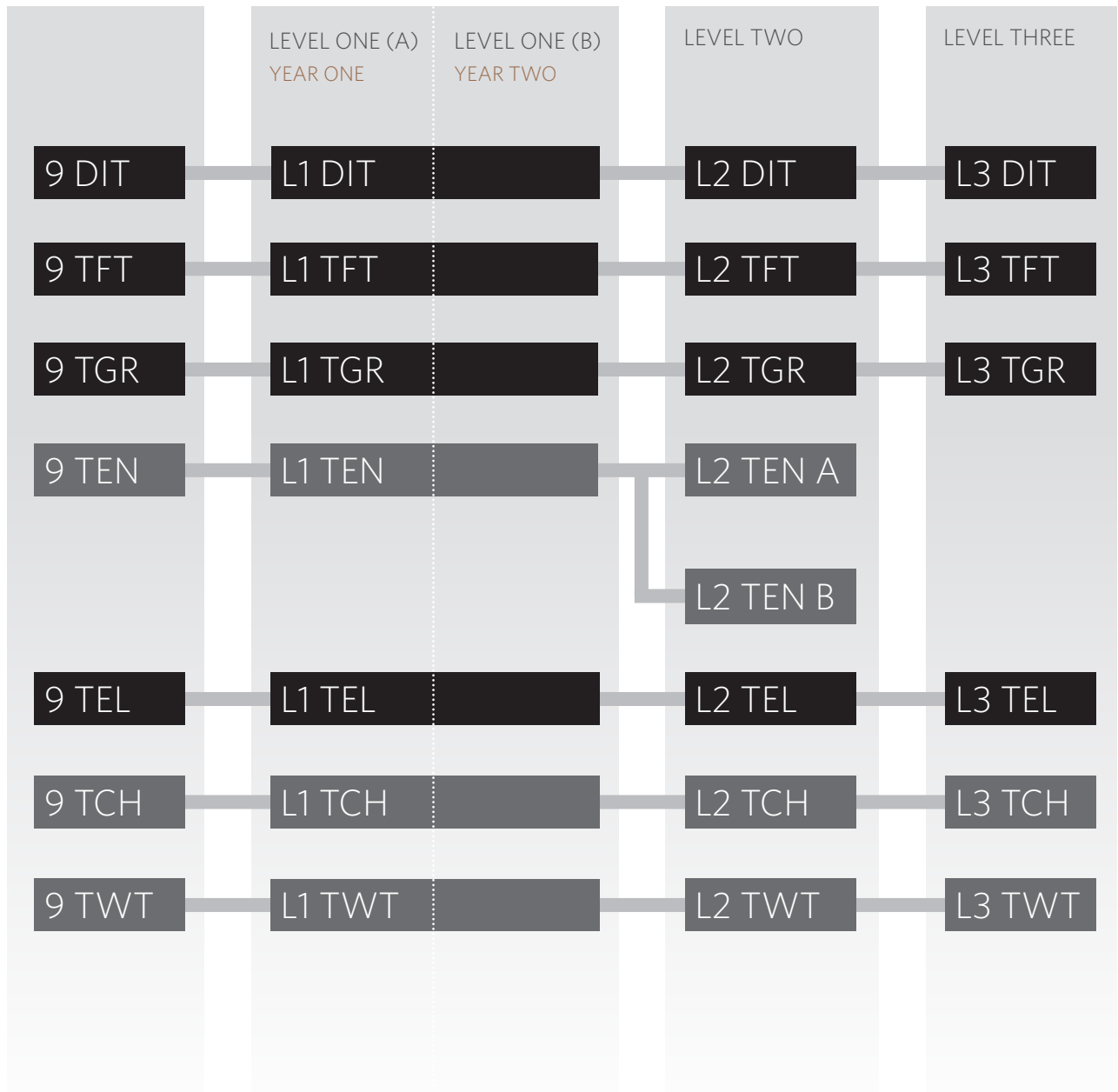




## APPLIED TECHNOLOGY FACULTY

A dynamic, high profile faculty offering a wide range of practical subjects in state of the art facilities, including a Design and Visual Communication department which is recognised as one of the best in New Zealand. NCEA and competition successes feature regularly with students gaining some of the top awards locally and nationally.

# SUBJECT PATHWAY



DIT = Digital Technologies

TWT = Wood Technology

TCH = Cuisine Studies/  
Hospitality

NZF = NZ Food Studies

TEL = Electronics

TEN = Engineering

TFT = Fabric Technology

TGR = Graphics

■ Compulsory subject

■ University approved pathway

■ Not a university approved pathway

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## YEAR 9 DIGITAL TECHNOLOGIES CODE: Y9 DIT

Credit Value: Nil

Number of Field Trips: Nil

Subject Material Costs: : \$15 Subscription to Adobe Creative Cloud Suite

Prerequisites: Internet and computer access at home. 2Gb+ Flash Drive

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**Course:** This is a two semester course offering an introduction to web design, animation, robotics, programming, data management and computer hardware. Students will:

- Create a simple website using html and CSS
- Create a simple Flash animation
- Program a Lego NXT robot to accomplish a series of mini challenges
- Use Scratch programming to create a game
- Create apps using App inventor
- Learn basic skills in Microsoft Excel, PowerPoint and Word
- Follow correct procedures when producing, accessing and storing data (computer misuse, copyright and piracy, the Data Protection Act, file management and backup, cybersafety)
- Create a database and carry out a mailmerge
- Look at computer science concepts such as binary numbers, image representation, text compression, error detection correction, search algorithms and programming languages

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## LEVEL 1 DIGITAL TECHNOLOGIES CODE: L1 DIT

Credit Value: 18+

Number of Field Trips: Nil

Subject Material Costs: \$15 Subscription to Adobe Creative Cloud Suite

Qualification: NCEA Level 1

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This two year course offers tuition in web design, animation, programming, data management and database development. Home internet, computer and a 2Gb+ Flash Drive required.

**L1A:** Students will learn how to:

- Create a website using html and CSS
- Database design
- Introduction to Python (programming language)
- Write a simple computer program
- Develop skills in Excel, Word and PowerPoint
- Use correct ethical procedures when producing, retrieving and storing data
- Understand the fundamentals of computer science

**L1B:** Students will learn how to:

- Effectively integrate applications in Microsoft Office 2010
- Effectively use design elements
- Understand correct ethical procedures when producing, using and storing data
- Database design
- Use planning tools to guide the technological development of an outcome

# COURSE DESCRIPTION

- Modify graphics, create a website and embed animation using the Adobe Creative Suite CS5.5
- Design and write a simple computer program
- Demonstrate understanding of basic concepts from computer science. This includes algorithms, programming languages and user interface design

This course leads to Level 2 DIT.

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## LEVEL 2 DIGITAL TECHNOLOGIES CODE: L2 DIT

Credit Value: 20-26

Number of Field Trips: Nil

Subject Material Costs: \$15 Subscription to Adobe Creative Cloud Suite

Qualification: NCEA Level 2

Prerequisites: 14 credits from L1 DIT

---

**Course:** This course offers more advanced tuition in web design and animation, programming, database and data management. Home internet, computer and 2Gb+ Flash Drive required. Students will learn how to:

- Use correct ethical procedures when producing, using and storing data on a network
- Plan and create a relational database
- Develop a conceptual design for an outcome
- Create a digital media outcome (website using html5 and CSS3)

- Plan and create a computer program using Python (optional)

Students will also look at advanced concepts in computer science. Topics include data representation, compression, error control coding, encryption and usability heuristics.

This course leads to Level 3 DIT.

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## L3 DIGITAL TECHNOLOGIES CODE: L3 DIT

Credit Value: 22

Number of Field Trips: Nil

Subject Material Costs: \$15 Subscription to Adobe Creative Cloud Suite

Qualification: NCEA Level 3

Prerequisites: 14 Level 2 credits from DIT

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**Course:** This course offers more advanced tuition in web design and animation, programming, MS Office (including database), data management and networks. Home internet, computer and 2Gb+ Flash Drive required. Students will learn how to:

- Plan and create a relational database
- Develop a conceptual design
- Develop a prototype
- Critique a technological outcomes design

Students will also look at two areas of computer science, software engineering and artificial intelligence

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## YEAR 9 FABRIC TECHNOLOGY CODE: 9 TFT

Credit Value: Nil

Number of Field Trips: Nil

Subject Material Costs: \$40

Other Costs: Students supply fabric for bag assignment

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**Course:** Students use the Technological process to design and make a diary cover and a bag. Students learn about different fabric properties and sewing techniques. Students learn how to use a sewing machine efficiently and draft basic patterns. Students are encouraged to be creative. All other consumables are provided.

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## LEVEL 1 FABRIC TECHNOLOGY CODE: L1 TFT

Credit Value: 22

Number of Field Trips: Nil

Subject Material Costs: \$60 per year

Other Costs: Students supply fabric as required

Qualification: NCEA Level 1

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**L1A:** Students use the technological process to design and make specified items of clothing. Students gain skills and knowledge to enable them to use sewing equipment effectively. Students learn about basic pattern drafting, and working with a variety of fabrics, using patterns and symbols. Students will use the specialised machinery and equipment as required for their assignments.

**L1B:** Through the technological process and the use of practical skills, students develop textile products that address the needs of clients. They also learn about the theory of the principles and elements of design. All other consumables are provided.

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## LEVEL 2 FABRIC TECHNOLOGY CODE: L2 TFT

Credit Value: 22

Number of Field Trips: Nil

Subject Material Costs: \$60 per year

Other Costs: Students supply fabric for projects as required

Qualification: NCEA Level 2

Prerequisites: 16 Level 1 credits in Fabric Technology

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**Course:** Students will complete two projects; the first one is practical skills based. The main project is based on selecting a client and working to a design brief to design and make a prototype for a textile outcome to meet the client's needs and specifications. For the external report they will investigate the issue of sustainability as it relates to fashion and textiles. All other consumables are provided.

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## LEVEL 3 FABRIC TECHNOLOGY CODE: L3 TFT

Credit Value: 20

Number of Field Trips: Nil

Subject Material Costs: \$60

Other Costs: Students supply fabric for projects as required

Qualification: NCEA Level 3

Prerequisites: 16 Level 2 credits in Fabric Technology

---

**Course:** Students will complete two projects; the first one is skills based. The main project is based on selecting a client and working to design and make a prototype for a textile outcome to meet the client's needs. An external report will investigate what good design is and the criteria we judge it by. All other consumables are provided.

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# COURSE DESCRIPTION

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## YEAR 9 GRAPHICS CODE: 9 TGR

Credit Value: Nil

Number of Field Trips: Nil

Subject Material Costs: \$50

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**Course:** This course introduces students to design and drawing through a variety of freehand and instrumental drawing systems. Some natural ability to draw, and an interest in design are helpful. A product kit, which the materials costs cover, is supplied to every student at the beginning of the course. A device that meets the school Student Owned Device Specifications, such as a tablet, netbook or laptop, is recommended.

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## LEVEL 1 GRAPHICS CODE: L1 TGR

Credit Value: 22

Number of Field Trips: Nil

Subject Material Costs: \$25 Year 1 and \$45 Year 2.

Other Costs: Specialist equipment in addition to that from Year 9 will need to be purchased. This includes things such as a drawing board for homework, rendering media and a range of drawing aids. Details of products, purchase procedures and prices will be given to students at the beginning of the course. All products are available from the Faculty.  
Qualification: NCEA Level 1

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**L1A:** The course develops and expands the skills introduced in Year 9. The focus is on design, instrumental and freehand drawing systems, rendering techniques and presentation of work.

**L1B:** There are two areas of study:

- Spatial Design - architecture, landscape graphics, perspective drawing

- Product Design - engineered products, consumer products, media products and associated drawing systems

A selected body of work will be promoted to an audience. There is no examination. All work for achievement standards will be from two design assignments. Work for the external standards will be sent to NZQA in November for marking. A device that meets the school Student Owned Device Specifications, such as a tablet, netbook or laptop is recommended.

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## LEVEL 2 GRAPHICS CODE: L2 TGR

Credit Value: 19

Number of Field Trips: Nil

Subject Material Costs: \$50. \$15 Subscription to Adobe Creative Cloud Suite

Other Costs: A financial outlay for specialist equipment and products may be required in addition to the materials fee.

Qualification: NCEA Level 2

Prerequisites: 19 credits or more from Level 1 Design and Visual Communication

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**Course:** A natural ability and sound skills from previous years are essential. A high degree of detail, complexity and analysis of work are required. There will be two sections:

- Spatial Design - architecture, landscape graphics and perspective drawing, interior design, etc.
- Product Design - engineered products, consumer products, media products and associated drawing systems

There is no examination. Students will complete two portfolios that will contain evidence for internal and external achievement standards.

The portfolio will be sent to NZQA in November for marking the external standards. A device that meets the school Student Owned Device Specifications, such as a tablet, netbook or laptop is recommended.

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## LEVEL 3 GRAPHICS

### CODE: L3 TGR

Credit Value: 16-22

Number of Field Trips: Nil

Subject Material Costs: \$50. \$15 Subscription to Adobe Creative Cloud Suite

Other Costs: A financial outlay for specialist equipment and products may be required in addition to the materials fee

Qualification: NCEA Level 3

Prerequisites: 16 credits from Level 2 Design and Visual Communication

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**Course:** An extension to the Level 2 course. A natural ability and high quality skills from Level 1 and 2 are essential at this advanced level. A higher degree of detail, complexity and critical thinking is required. Students will have the option of working in one of two areas of study: Spatial Design or Product Design. A portfolio of work will be produced in the chosen area of study. This will contain evidence from both external and internal achievement standards. A visual presentation may be developed that exhibits the design outcome to an audience. There is no examination. The Design and Visual Communication Level 4 Scholarship Standard is available. A device that meets the school Student Owned Device Specifications, such as a tablet, netbook or laptop is recommended.

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## YEAR 9 ENGINEERING

### CODE: 9 TEN

Credit Value: Nil

Number of Field Trips: Nil

Subject Material Costs: \$40

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**Course:** An introduction to the technology processes working with engineering materials. This is a hands-on course aiming to introduce and build skills by constructing a variety of projects in the engineering workshop.

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## LEVEL 1 ENGINEERING

### CODE: L1 TEN

Credit Value: 27 for **L1A**; 14 for **L1B** (Unit Standard credits)

Number of Field Trips: Nil

Subject Material Costs: \$90 per year

Qualification: NCEA Level 1 – National Certificate in Mechanical Engineering Technology (Level 1)

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**L1A:** Other Costs: A small financial outlay in addition to the materials fee may be required depending on individual finishing/polishing requirements.

This is a practical skill-based course in light Engineering involving students in designing, making and documenting processes. Students will take home a project at the conclusion of the course. The course will lay the foundation for the Engineering Training Organisation Unit Standards course in Level 1 which caters for those wishing to pursue an Engineering career or apprenticeship.

**L1B:** The course consists of a combination of written and practical work. Students will be assessed on their competence in using tools and machinery in the Engineering workshop. Understanding of materials and safe working practices will also be assessed.

# COURSE DESCRIPTION

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## LEVEL 2A ENGINEERING CODE: L2 TEN A

Credit Value: 21 Level 2 Unit Standard credits  
Number of Field Trips: Nil  
Subject Material Costs: : \$90 to \$330  
depending on project chosen  
Qualification: NCEA Level 2  
Prerequisites: 24 Level 1 Engineering credits

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**Course:** This course is part of a two year programme which leads to the engineering industry recognised National Certificate in Mechanical Engineering (Level 2). Students will need to demonstrate skills and knowledge in practical, written and graphic assignments.

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## LEVEL 2B ENGINEERING CODE: L2 TEN B

Credit Value: 16 Level 2 Unit Standards; 20 Level 3 Unit Standards  
Number of Field Trips: Nil  
Subject Material Costs: \$90  
Qualification: NCEA Level 2  
Prerequisites: 20 Level 2 Engineering credits

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**Course:** In this course students will build on their work in L2A gaining credits towards the National Certificate in Engineering (Level 2).

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## YEAR 9 ELECTRONICS CODE: 9 TEL

Credit Value: Nil  
Number of Field Trips: Nil  
Subject Material Costs: \$30  
Other Costs: It is recommended that students have a Windows-based device capable of running Picaxe and Eagle.

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**Course:** This course serves as an introduction to Electronics. It will introduce basic understanding of how circuits work by students building working projects that can be taken home. Students will see different ways circuits can be put together as well as gaining experience of soldering. This course is a good start for those considering studying Electronics at NCEA Level 1.



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## LEVEL 1 ELECTRONICS

### CODE: L1 TEL

Credit Value: 17  
Number of Field Trips: Nil  
Subject Material Costs: \$60 per year  
Other Costs: We highly recommend that students have a Windows-based device capable of running Picaxe and Eagle.  
Qualification: NCEA Level 1

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**L1A:** This is the start of the Level 1 course covering basic Electronics. Students will learn the skills of circuit construction as well as understanding basic components. The course is aimed at students building individual projects that can be taken home. The course will be made up of theory and practical elements.

**L1B:** This follows on from the Year 1 course. Students continue to work on individual projects using these to increase understanding of electronics and individual components. Students also learn how to program chips and building working devices, and write reports for NCEA based on subject knowledge. There is no final exam.

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## LEVEL 2 ELECTRONICS

### CODE: L2 TEL

Credit Value: 18  
Number of Field Trips: Nil  
Subject Material Costs: \$60  
Other Costs: We highly recommend that students have a Windows-based device capable of running Picaxe and Eagle.  
Qualification: NCEA Level 2  
Prerequisites: 14 credits Level 1 Electronics

---

**Course:** This course is a university approved achievement standards course in Electronics. Students build on the work in Level 1 with more in depth knowledge of individual components and programming Picaxe to a higher level. Students complete a variety of projects during the course and write reports for NCEA based on subject knowledge. There is no final exam.

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## LEVEL 3 ELECTRONICS

### CODE: L3 TEL

Credit Value: 20  
Number of Field Trips: Nil  
Subject Material Costs: \$60  
Other Costs: We highly recommend that students have a Windows-based device capable of running Picaxe and Eagle.  
Qualification: NCEA Level 3  
Prerequisites: 14 Level 2 Electronics credits

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**Course:** This course is a continuation of Level 2 Electronics. It is a combination of practical skills and theoretical knowledge. During this course students build a variety of different projects, test and modify them, as well as understanding the underlying electronics behind the project. Projects are written up during the course of the year as well as a research assignment, so there is no final exam.

# COURSE DESCRIPTION

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## YEAR 9 CUISINE STUDIES CODE: 9 TCH

Credit Value: Nil

Number of Field Trips: Nil

Subject Material Costs: \$120

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**Course:** An introductory course to Cuisine Studies focusing on cookery and front of house. This will enable students to make decisions about senior courses later in their pathway. The course covers basic cooking techniques, cultural foods, teamwork, health and safety and nutrition.

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## LEVEL 1 HOSPITALITY CODE: L1 TCH

Credit Value: 25 Level 1, 10 Level 2

Number of Field Trips: Nil

Subject Material Costs: \$350 per year

Qualification: NCEA Level 1 Hospitality Standards Institute Certificate

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**L1A:** Students will have the opportunity to achieve some Level 1 credits (all gained by continual internal assessment) by applying knowledge of hygiene and safety and demonstrating the use of equipment consistently throughout the year.

**L1B:** This is a practically based course which includes units of learning recognised and linked with Polytechnics and the Hospitality Standards Institute. This course is ideal for those seeking employment in this field or going on to advanced studies in Chef work, Hotel Management, Tourism or starting their own catering business. Students will be expected to cater for functions. Appropriate covered footwear is needed in all practical lessons and chef jackets must be worn in all practical lessons.

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## LEVEL 2 HOSPITALITY CODE: L2 TCH

Credit Value: 16

Number of Field Trips: Nil

Subject Material Costs: \$350 per year

Qualification: NCEA Level 2 and Hospitality Standards Institute Certificate

Prerequisites: 14 Level 1 Hospitality or Home Economics credits

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**Course:** This is a practically based course which includes units of learning recognised and linked with Polytechnics and the Hospitality Standards Institute. This course is ideal for those seeking employment in this field or going on to advanced studies in Chef work, Hotel Management, Tourism or starting their own catering business. Students will need to select between a Barista strand or Cookery strand. The Barista strand focuses on learning to prepare coffee and selling coffee to customers within the school community. Appropriate covered footwear is needed in all practical lessons and chef jackets must be worn in all practical lessons.

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## LEVEL 3 HOSPITALITY CODE: L3 TCH

Credit Value: 19  
Number of Field Trips: 1  
Subject Material Costs: \$350 per year  
Qualification: NCEA Level 3 and Hospitality Standard Institute Certificate  
Prerequisites: unit standard 167 and 12 Level 2 Hospitality or Home Economics credits

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**Course:** This is a practically based course which includes units of learning recognised and linked with Polytechnics and the Hospitality Standards Institute. This course is ideal for those seeking employment in this field or going on to advanced studies in Chef work, Hotel Management, Tourism or starting their own catering business. Students will be expected to cater for functions. Appropriate covered footwear is needed in all practical lessons and chef jackets must be worn in all practical lessons. Students new to Food courses may take this course but need to pass unit standard 167 first.

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## YEAR 9 WOOD TECHNOLOGY CODE: 9 TWT

Credit Value: Nil  
Number of Field Trips: Nil  
Subject Material Costs: \$50

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**Course:** An introduction to the practical and theory elements of Wood Technology. This course covers workshop safety, an introduction to hand tools and an introduction to woodworking machines. An article of furniture will be made to take home.

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## LEVEL 1 WOOD TECHNOLOGY CODE: L1 TWT

Credit Value: 19 credits at Level 1, 12 credits at Level 2  
Number of Field Trips: Nil  
Subject Material Costs: Year 1 \$80, Year 2 \$120  
Qualification: NCEA Level 1  
Other Costs: Hardware, handles and polish may need to be purchased by students, depending on individual requirements

---

**L1A:** This is a practical skill-based course in Woodwork involving students in designing, making and documenting processes. Students will take home a project at the conclusion of the course. This course will offer unit standards totalling 10 credits.

**L1B:** This is a NCEA Unit Standard Technology course using wood-based products as a materials medium. Students will gain credits for success with design, brief development, individual production of a prototype, and documentation of processes. This course is designed as a skills and knowledge pre-requisite for Level 2 Wood Technology. An article of furniture will be made to take home.

# COURSE DESCRIPTION

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## LEVEL 2 WOOD TECHNOLOGY CODE: L2 TWT

Credit Value: 21 credits at Level 2

Number of Field Trips: Nil

Subject Material Costs: \$130

Other Costs: Hardware, handles and polish may need to be purchased by students depending upon individual requirements

Qualification: NCEA Level 2

Prerequisites: Level 1 Wood Technology

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**Course:** This is a full NCEA Unit Standard Technology course using wood-based products as a materials medium. Students will gain credits for success with design, brief development, individual production of a prototype and documentation of processes. An article of furniture will be made to take home.

## LEVEL 3 WOOD TECHNOLOGY CODE: L3 TWT

Credit Value: 19 credits at Level 3

Number of Field Trips: Nil

Subject Material Costs: \$130

Other Costs: Hardware, handles and polish may need to be purchased by students depending upon individual requirements

Qualification: NCEA Level 3

Prerequisites: Level 2 Wood Technology

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**Course:** This is a full NCEA Unit Standard Technology course using wood-based products as a materials medium. Students will gain credits for success with design, brief development, individual production of a prototype and documentation of processes. An article of furniture will be made to take home.