

# TECHNOLOGY

## CAREERS:

Technology will provide an understanding of process of Designing, Developing, Making, Testing and Evaluating Technological Products.

Technology applies scientific, mathematical, linguistic and creative knowledge to our use of tools, machines, devices, crafts and systems to help find better ways of doing things and to solve needs and problems. Technology can be as simple as using basic hand tools, or as complex as programming and operating computer driven equipment.

Technology teaches the safe and correct methods of using both hand tools and power driven equipment and the disciplines of working in a practical environment. It also builds an appreciation of a wide range of materials and their personal, social, moral and environmental impact. It also supports students in learning about workplace life skills and in preparation for their future careers whether by entry as a junior employee, an apprentice, or going on to further study at Polytech or University.

## Vocational Pathways for Technology

### Construction and Infrastructure (CI)

If you are interested in a career that involves physical work, working with your hands, tools, machinery and equipment and primarily focussing on building, repair or maintenance work then this sector is for you.

#### **Types of jobs for this Vocational Pathway include:**

Architect / Landscape Architect, Interior Designer, Civil Engineering Technician, Construction Project Manager, Building Contractor, Tiler, Joiner, Scaffolder, Plasterer, Painter & Decorator, Stone Mason, Plumber, Plasterer, Project manager, Quantity surveyor, Roofer, Stonemason, Survey technician, Exhibition technician, Industrial Spray painter, Technical writer, Interior designer

### Manufacture and Technology (MT)

If you are interested in a career from hands on production and assembly to construction or even computer design then this is the ideal pathway for you to follow.

#### **Types of jobs for this Vocational Pathway include:**

Industrial Designer, Engineering Professionals, Gaming Software Developer, Fitter, Automotive Technician, Welder, Engineer, Technical Manager, Foreman, Baker, Food and Beverage Factory Worker, Food Technologist, Purchasing/Supply Officer, Brewer, Meat Inspector, Meat/Seafood Process Worker, Winemaker, Dairy Products Maker, Boat builder, Cabinet maker, Builder, Screen printer, Sewing machinist, Clothing manufacturer, Clothing marker/cutter, Clothing pattern maker, Printer, Tailor/dressmaker, Upholsterer

### Primary Industry Sector (PI)

You'll be contributing to an important and sustainable sector that's one of New Zealand's biggest employers and exporters. Whether you're from a rural background or a townie, there's something here for you.

#### **Types of jobs for this Vocational Pathway include:**

Meat Inspector, Meat/Seafood Process Worker, Microbiologist, Quarantine Inspector, Food Technologist, Dairy Products Maker, Fishery Officer, Winemaker, Fence, Forester, Forestry & Logging, Grounds-man, Saw Doctor, Wood Processor

### Service Industry Sector (SI)

With skills from this sector you can work and travel the world. It can be truly inspirational – from travel to tourism, hairdressing to hospitality, physical fitness to financial services. In these jobs you're the brand, dealing directly with people.

#### **Types of jobs for this Vocational Pathway include:**

Health and Safety Inspector, Private Teacher/Tutor, Baker, Bartender, Brewer, Café Worker, Café/Restaurant Manager, Chef, Cook, Dietician, Kitchen hand, Waiter/Waitress, Demonstrator, Caretaker, Industrial Designer, Picture framer, Production Assistant, Project Manager

### Social and Community Services (SC)

With skills from this sector you can: work with people of different ages, life stages, abilities and cultures, counsel and treat people, promote health and offer advice, provide medical research, testing and technical support.

#### **Types of jobs for this Vocational Pathway include:**

Environmental Health Officer, Primary School Teacher, Private Teacher/Tutor, Health Promoter, Secondary School Teacher, Nanny/Child-carer, Teacher Aide, Tertiary Teacher, Dietician, Early Childhood Teacher, Building inspector, Technology Teacher

### Creative Industries (CR)

Whether you are looking to move onto further study, training or work, or you're unsure about your options, the yellow pathway will help you plan your study and career options in the Creative Industries.

#### **Types of jobs for this Vocational Pathway include:**

Graphic and Web Designers, Industrial Designers, Stage/Set Designer, Architect, Marine Architect, Planner, Technical writer, Animator, Jeweller, Creative Director Artist, Screen Printer, Art Director, Technical Manager, Creative Director, Fashion Illustrator, Fashion Designer, Costume Designer, Fashion Magazine Editor, Graphic designer, Industrial designer, Sign writer, Tailor/dressmaker, Upholsterer

# ENGINEERING TECHNOLOGY

Level 1 ENGINEERING TECHNOLOGY	
<b>Prerequisite:</b>	Junior Technology - Year 9 and/or Year 10
<b>Summary of Course:</b>	Individualised projects for use around the home. Will require the development of a personal design portfolio and a functioning practical project outcome.
<b>Fees:</b>	Costs for materials (typically ranging from \$10 - \$400)

Assessment	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
US22926	•	•					2	Demonstrate knowledge of safety procedures in a specific engineering workshop
AS91044	•	•	•			•	4	Undertake brief development to address a need or opportunity (L)
AS91045	•	•	•			•	4	Use planning tools to guide the development of an outcome
AS91047	•	•	•			•	6	Undertake development to make a prototype to address a brief
AS91057	•	•	•				6	Implement basic procedures using resistant materials to make a specified product
AS91059	•	•	•			•	4	Demonstrate understanding of basic concepts used to make products from resistant materials (L)
US4433		•	•				2	Select, use and care for simple measuring devices used in engineering
US2395		•	•				4 (L2)	Select, use and care for engineering hand tools(Level2)
								<b>Externally assessed</b>
AS91048	•	•	•			•	4	Demonstrate understanding of how technological modelling supports decision-making (L)

Level 2 ENGINEERING TECHNOLOGY	
<b>Prerequisite:</b>	Yr 11 Level 1 Technology – minimum of 14 credits
<b>Summary of Course:</b>	Individualised project – typically being a motorised mini-motorbike or go-kart. Develops confidence and competence with design, development, fabrication and evaluation of a complex project. Will require the development of a personal design portfolio and a functioning practical project outcome.
<b>Fees:</b>	Costs for materials (Range from \$55 – \$550 and typically \$450)

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
US21911			•					2	Demonstrate knowledge of safety on engineering worksites
AS91354		•	•	•			•	4	Undertake brief development to address an issue
AS91355		•	•	•			•	4	Select and use planning tools to manage the development of an outcome
AS91357		•	•	•			•	6	Undertake effective development to make and trial a prototype
AS91344		•	•				•	6	Implement advanced procedures using resistant materials to make specified product with special features
AS91347		•	•				•	4	Demonstrate understanding of advanced concepts used to make products
US2430			•					4	Draw and Interpret engineering sketches under supervision
US4435			•					3	Select, use, and care for engineering dimensional measuring equipment
US4436			•					4	Select, use, and care for engineering marking out equipment
US2396			•	•				4	Select, use and maintain portable hand held engineering power tools
									Externally assessed
AS91358		•	•					4	Demonstrate understanding of how technological modelling supports risk management

<b>Level 3 ENGINEERING TECHNOLOGY</b>	
<b>Prerequisite:</b>	Minimum of 20 Technology credits
<b>Summary of Course:</b>	Develops confidence and competence with current and emerging Technologies.  Having a wide possible project scope, the challenge is to design, develop, fabricate, commission and evaluate a functioning project prototype that satisfies a student-defined Design Brief agreed to by an authentic stakeholder. The prototype development is to be documented in a comprehensive design portfolio.
<b>Fees:</b>	Costs for materials (typically ranging from \$0 - \$200)

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
US29677								2	Follow safe workplace practices, and contribute to a health and safety culture, in a BCATS environment
AS90828		•		•				6	Evaluate a personal action that contributes towards a sustainable future
AS91608		•	•				•	4	Undertake brief development to address an issue within a determined context
AS91609		•	•	•	•			4	Undertake project management to support technological practice
AS91610		•	•	•			•	6	Develop a conceptual design considering fitness for purpose in the broadest sense
AS91611		•	•	•			•	6	Develop a prototype considering fitness for purpose in the broadest sense
AS91620		•	•				•	6	Implement complex procedures to integrate parts using resistant materials to make a specified product
AS91622		•	•					4	Implement complex procedures to make a specified product using a Computer Numerical Controlled (CNC) machine
AS91527		•	•	•		•		3	Use physics knowledge to develop an informed response to a socio-scientific issue
<i>University Literacy W = writing R = reading</i>									<b>Externally assessed</b>
AS91612	W	•	•					4	Demonstrate understanding of how modelling supports technological development & implementation

## WOOD DESIGN TECHNOLOGY

<b>Level 1 WOOD DESIGN TECHNOLOGY</b>	
<b>Prerequisite:</b>	Junior Technology - Year 9 and/or 10
<b>Summary of Course:</b>	Individualised projects for use around the home. Will involve both a personal portfolio creation and practical project outcomes
<b>Fees:</b>	Costs for materials (typically ranging from \$10 - \$200)

Assessment	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
US22926	•	•					4	Demonstrate knowledge of safety procedures in a specific engineering workshop
US22926	•	•					2	Demonstrate knowledge of safety procedures in a specific engineering workshop
US24355	•		•				4	Demonstrate knowledge of construction and manufacturing materials used in BCATS projects
US25919	•						2	Use hardware and fastenings for a BCATS project
AS91047	•	•	•			•	6	Undertake development to make a prototype to address a brief
AS91057	•	•	•				6	Implement basic procedures using resistant materials to make a specified product
AS91059	•	•	•			•	4	Demonstrate understanding of basic concepts used to make products from resistant materials (L)
<b>Externally assessed</b>								
AS91049	•	•	•			•	4	Demonstrate understanding how materials enable technological products to function (L)

(L) = Literacy (N) = Numeracy

<b>Level 2 WOOD DESIGN TECHNOLOGY</b>	
<b>Prerequisite:</b>	Yr 11 Level 1 Technology – minimum of 12 Technology credits
<b>Summary of Course:</b>	Individualised furniture / outdoor projects for use around the home Will involve both a personal portfolio creation and a practical project outcome
<b>Fees:</b>	Costs for materials (Range from \$0 – \$200)

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
US21911			•					2	Demonstrate knowledge of safety on engineering worksites
US24360		•		•				5	Demonstrate knowledge of timber and other construction materials used in BCATS projects
US12932		•						8	Construct timber garden furniture and items of basic construction equipment as a BCATS project
AS91357		•	•	•			•	6	Undertake effective development to make and trial a prototype
AS91344		•	•				•	6	Implement advanced procedures using resistant materials to make specified product with special features
AS91347		•	•				•	4	Demonstrate understanding of advanced concepts used to make products
									<b>Externally assessed</b>
AS91359		•	•	•			•	4	Demonstrate understanding of the role of material evaluation in product development.

<b>Level 3 WOOD DESIGN &amp; BUILDING TRADES TECHNOLOGY</b>	
<b>Prerequisite:</b>	A good attitude
<b>Summary of Course:</b>	<ul style="list-style-type: none"> <li>Individual project assignment and group work.</li> <li>An individualised furniture, outdoor or sporting project for a client / stakeholder. Will involve both a personal portfolio creation and functioning practical project outcomes</li> </ul>
<b>Fees:</b>	Costs for materials (typically ranging from \$60-\$250.00)

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
US29677								2	Follow safe workplace practices, and contribute to a health and safety culture, in a BCATS environment
US29684								12	Undertake a Stage 3 BCATS project
US29681								3	Measure and calculate for a Stage 3 BCATS project
US29682								4	Select, use, and maintain tools, equipment and machinery for a Stage 3 BCATS project
US29679								8	Develop and use BCATS project documentation for a Stage 3 BCATS project
AS91611		•	•	•			•	6	Develop a prototype considering fitness for purpose in the broadest sense
AS91622		•	•					4	Implement complex procedures to make a specified product using a Computer Numerical Controlled (CNC) machine
AS91625			•					3	Demonstrate understanding of a complex machine
<i>University Literacy W = writing R = reading</i>									<b>Externally assessed</b>
AS91613	W	•	•	•				4	Demonstrate understanding of material development

# BUILDING TRADES TECHNOLOGY

Level 2 BUILDING TRADES TECHNOLOGY	
<b>Summary of Course:</b>	Building Trades Technology is about starting a career in the trades. Students can choose from a range of Building and Construction Unit Standards to develop skills and become valuable contributors to New Zealand's building and construction industry. This L2 course combines BCITO theory based Industry Unit Standards with Practical skills. Students can experience a range of Trades allowing them to consider different career paths within the Building and Construction Industry. Level 2 covers skills in communication, literacy, maths, quality standards, workshop procedures, drawing plans, job specifications, health and safety, materials knowledge (including timber, metal, plastic, glass and rubber), and hand tools, power tools, and fixed machinery. Students can choose from a range of Unit Standards and projects.
<b>Cost:</b>	Students pay for take home materials

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
12927								6	Demonstrate knowledge of, select, maintain, and use, hand tools for BCATS projects
12932								8	Construct timber garden furniture as BCATS projects
24350								6	Identify, select, use and maintain portable power tools for BCATS projects
24354								4	Demonstrate knowledge of health and safety legislation and apply safe working practices in a BCATS environment
24357								4	Receive instructions and communicate information in relation to BCATS projects
24358								3	Plan and monitor the construction of a BCATS project, and quality check the product
24360								5	Demonstrate knowledge of timber and other construction materials used in BCATS projects
24361								3	Apply mathematical processes to BCATS projects
25319								2	Demonstrate knowledge of the carpentry industry within a BCATS environment
25320								2	Demonstrate knowledge of the civil infrastructure industry within a BCATS environment
25322								2	Demonstrate knowledge of the drainlaying industry within a BCATS environment
25323								2	Demonstrate knowledge of the exterior plastering industry within a BCATS environment
25325								2	Demonstrate knowledge of the floor and wall tiling industry within a BCATS environment
25327								2	Demonstrate knowledge of the gasfitting industry within a BCATS environment
25328								2	Demonstrate knowledge of the glass industry within a BCATS environment
25329								2	Demonstrate knowledge of the interior systems industry within a BCATS environment
25330								2	Demonstrate knowledge of the joinery industry within a BCATS environment
25333								2	Demonstrate knowledge of the plumbing industry within a BCATS environment
25334								2	Demonstrate knowledge of the roofing industry within a BCATS environment

<b>Level 3 BUILDING TRADES TECHNOLOGY</b>	
<b>Summary of Course:</b>	Building Trades Technology is about starting a career in the trades. Students can choose from a range of Building and Construction Unit Standards to develop skills and become valuable contributors to New Zealand's building and construction industry. This L3 course combines BCITO theory based Industry Unit Standards with Practical skills. Students can experience a range of Trades allowing them to consider different career paths within the Building and Construction Industry. Students can select their own projects in any of BCITO's 15 sectors providing they meet the Stage 3 BCATS project criteria. They can undertake projects in any of BCITO's trades and can be achieved in school workshops, and/or in the workplace during industry placements ('work experience'). Suitable for students who are participating in Gateway.
<b>Cost:</b>	Students pay for take home materials

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
29677								2	Follow safe workplace practices, and contribute to a health and safety culture, in a BCATS environment
29678								4	Demonstrate knowledge of, select, and use materials for a Stage 3 BCATS project
29679								8	Develop and use BCATS project documentation for a Stage 3 BCATS project
29680								5	Communicate and work collaboratively in a Stage 3 BCATS project
29681								3	Measure and calculate for a Stage 3 BCATS project
29682								4	Select, use, and maintain tools, equipment and machinery for a Stage 3 BCATS project
29683								2	Incorporate other building, construction and allied trades into a Stage 3 BCATS project schedule
29684								12	Undertake a Stage 3 BCATS project

## FASHION DESIGN TECHNOLOGY

<b>Level 1 FASHION DESIGN TECHNOLOGY</b>	
<b>Prerequisite:</b>	Junior Technology - Year 9 and/or 10
<b>Summary of Course:</b>	This course has a large practical component and comprises of level one achievement standards. Students will learn to use commercial patterns and apply basic textile concepts to construct Fashion garments. They will also present drawings to communicate their own ideas which may include the use of computer-aided-design software. Students will gain competence using various textile equipment and processes to develop and evaluate their final conceptual design. Students should complete between 10 to 20 credits.
<b>Fees:</b>	\$40 take home cost.

Assessment	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS91046	•	•	•			•	6	Undertake design ideas to produce a conceptual design for an outcome to address a brief
AS91058	•	•				•	6	Implement basic procedures using textile materials to make a specified product
AS91060	•	•				•	4	Demonstrate understanding of basic concepts used to make products from textile materials (L)
AS91066	•	•				•	3	(DVC) Use rendering techniques to communicate the form of design ideas
AS91068	•	•				•	6	Undertake development of design ideas through graphics practice
								<b>Externally assessed</b>
AS91063	•	•				•	3	(DVC) Produce freehand sketches that communicate design ideas.

(L) = Literacy (N) = Numeracy

<b>Level 2 FASHION DESIGN TECHNOLOGY</b>	
<b>Prerequisite:</b>	Year 9 and preferably Level 1 Technology
<b>Summary of Course:</b>	This course has a large practical component and comprises of level two achievement standards. Students will implement a range of advanced textile processes to incorporate special features when constructing their fashion garment. They will also present fashion drawings which can include the use of computer-aided-design software. Students will need to apply technological concepts throughout the development and evaluation of their chosen solution. They should complete between 10 to 20 credits.
<b>Fees:</b>	\$40 take home cost

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS91354		•	•	•			•	4	Undertake brief development to address an issue
AS91356		•	•	•			•	6	Develop a conceptual design for an outcome
AS91345			•				•	6	Implement advanced procedures using textile materials to make a specified product with special features
AS91346			•				•	4	Demonstrate understanding of advanced concepts used to make textile products.
AS91350		•	•				•	4	Make advanced adaptations to a pattern to change the structural and style features of a design.
									<b>Externally assessed</b>
AS91337		•	•	•			•	3	Use visual communication techniques to generate design ideas.

<b>Level 3 FASHION DESIGN TECHNOLOGY</b>	
<b>Prerequisite:</b>	Year 9 Fabric Technology completed. Year 11 and/or 12 Fabric Technology is strongly recommended
<b>Summary of Course:</b>	This course has a large practical component and comprises of level three achievement standards. Students will implement a range of complex textile processes to incorporate special features when constructing their fashion garment. They will also present fashion drawings which can include the use of computer-aided-design software. Students will need to apply technological concepts throughout the development and evaluation of their chosen solution. Students will gain competence using various textile concepts to manipulate materials to enhance the shape, form and structure of their chosen conceptual idea. Students should complete between 10 to 20 credits.
<b>Fees:</b>	\$40 take home cost

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS91608		•	•				•	4	Undertake brief development to address an issue within a determined context
AS91621		•	•				•	6	Implement complex procedures using textile materials to make a specified product
AS91626			•				•	6	Draft a pattern to interpret a design for a garment
AS91610		•	•	•			•	6	Develop a conceptual design considering fitness for purpose in the broadest sense
									<b>Externally assessed</b>
AS91627		•	•	•	•		•	4	Initiate design ideas through exploration



# FOOD DESIGN TECHNOLOGY

Level 1 FOOD DESIGN TECHNOLOGY	
<b>Prerequisite:</b>	Junior Technology - Year 9 and/or 10
<b>Summary of Course:</b>	This course is focused on the food choices and well-being of adolescents. Key areas of study include safe food handling practices, basic cookery skills, recommended guidelines for adolescent nutrition, consumer rights and the impact food labelling, packaging and promotional material has on people's food choices. Students are required to explore the factors that influence their eating patterns and improve and adapt recipes to enhance their nutritional health and well-being.

Assessment	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS90956			•	•	•		5	Demonstrate knowledge of an individual's nutritional needs
AS90957				•	•		5	Demonstrate understanding of societal influences on individual's food choices and well-being (L)
AS90959			•	•	•		5	Demonstrate knowledge of practices and strategies to address food handling issues (L)
AS91082		•	•				4	Implement basic procedures to process a specified product
								<b>Externally assessed</b>
AS90961			•	•	•		4	Demonstrate understanding of how packaging information influences an individual's food choices and well-being (L)

(L) = Literacy (N) = Numeracy

Level 2 FOOD DESIGN TECHNOLOGY	
<b>Prerequisite:</b>	Level 1 Food Design Technology or with Department approval
<b>Summary of Course:</b>	This course requires students to explore the food patterns of people in society with different nutritional needs eg vegetarians, gluten free, lactose intolerant. Students also investigate local foods and analyse factors such as social gradient, transportation, income and how these influence food choices and well-being. Strategies used to improve health and well-being are also explored.

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS91299					•	•		5	Analyse issues related to the provision of food for people with specific food needs
AS91351			•	•				4	Implement advanced procedures to process a specified product
AS91354		•	•	•			•	4	Undertake brief development to address an issue
AS91357		•	•	•			•	6	Undertake effective development to make and trial a prototype
University Literacy W = writing R = reading								<b>Externally assessed</b>	
AS91300	W				•	•		4	Analyse the relationship between well-being, food choices and the determinants of health
AS91304	W					•		4	Evaluate health promoting strategies designed to address a nutritional need

Level 3 FOOD DESIGN TECHNOLOGY	
<b>Prerequisite:</b>	Level 1 or 2 Technology or with Department Approval
<b>Summary of Course:</b>	This course is project based. Students will be required to identify and explore food issues and develop possible solutions.

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS91608		•	•				•	4	Undertake brief development to address an issue within a determined context
AS91611		•	•	•			•	6	Develop a prototype considering fitness for purpose in the broadest sense
AS91643			•	•	•			6	Implement complex procedures to process a specified product
University Literacy W = writing R = reading								<b>Externally assessed</b>	
AS91471	W				•	•		4	Analyse influences of food advertising on wellbeing



# DESIGN & VISUAL COMMUNICATION (ARCHITECTURE AND PRODUCT DESIGN)

Level 1 DESIGN & VISUAL COMMUNICATION	
<b>Prerequisite:</b>	Year 10 DVC Preferable. TIC approval. An interest in design and working above and beyond standard class time
<b>Summary of Course:</b>	<ul style="list-style-type: none"> <li>Students will individually design content and structure of their course of study</li> <li>Research an influential designer and use ideas from their work to influence your design</li> <li>Use graphics practice to develop design ideas</li> <li>Design a product and/or living space design of own choosing</li> <li>Draw 2D and 3D drawings using drawing equipment</li> <li>Render final design/s to show colour, shading and texture</li> <li>Promote your design ideas through a presentation – OPTIONAL</li> </ul>

Assessment	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS91066	•	•				•	3	Use rendering techniques to communicate the form of design ideas
AS91067		•				•	3	Use the work of an influential designer to inform design ideas
AS91068	•	•				•	6	Undertake development of design ideas through graphics practice
AS91069	•	•				•	4	Promote an organised body of design work to an audience using visual communication techniques (L)
								<b>Externally assessed</b>
AS91063	•	•				•	4	Produce freehand sketches to communicate own design ideas
AS91064	•	•				•	3	Produce instrumental, multi-view orthographic drawings that communicate technical features of design ideas (N)
AS91065	•	•				•	3	Produce instrumental paraline drawings to communicate design ideas (N)

(L) = Literacy (N) = Numeracy

Level 2 DESIGN & VISUAL COMMUNICATION	
<b>Prerequisite:</b>	Level 1 DVC. TIC approval An interest in design and working above and beyond standard class time
<b>Summary of Course:</b>	<ul style="list-style-type: none"> <li>Students will individually design content and structure of their course of study</li> <li>Students will choose which standards are most appropriate (minimum 14 credits)</li> <li>Research an influential design movement or era and use ideas from research to influence your design</li> <li>Use visual communication techniques to generate design ideas</li> <li>Develop a product and/or spatial design of own choosing</li> <li>Produce 2D working drawings of your design using equipment and/or computer software</li> <li>Produce 3D instrumental perspective drawing using drawing equipment</li> <li>Promote your design ideas through composing a presentation</li> </ul>

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS91340							•	3	Use the characteristics of a design movement or era to inform own design ideas
AS91341		•	•				•	6	Develop a spatial design through graphics practice
AS91342		•	•				•	6	Develop a product design through graphics practice
									Externally assessed
AS91337		•	•	•			•	3	Use visual communication techniques to generate design ideas
AS91338		•	•	•			•	4	Produce working drawings to communicate technical details of a design
AS91339		•	•				•	3	Produce instrumental perspective projection drawings to communicate design ideas

<b>Level 3 DESIGN &amp; VISUAL COMMUNICATION</b>	
<b>Prerequisite:</b>	Level 2 DVC preferable. TIC approval An interest in design and working above and beyond standard class time
<b>Summary of Course:</b>	<ul style="list-style-type: none"> <li>• Students will individually design content and structure of their course of study</li> <li>• Students will choose which standards are most appropriate (minimum 14 credits)</li> <li>• Use exploration of different areas to influence your design</li> <li>• Use graphics practice to develop design ideas</li> <li>• Resolve a product and/or a spatial design of own choice</li> <li>• Draw 2D and 3D working drawings using drawing equipment and/or computer software</li> </ul>

Assessment	Uni Lit	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
AS91628		•	•	•			•	6	Develop a visual presentation that exhibits a design outcome to an audience
AS91629		•	•				•	6	Resolve a spatial design through graphics practice
AS91630		•	•				•	6	Resolve a product design through graphics practice
									<b>Externally assessed</b>
AS91627		•	•	•	•		•	4	Initiate design ideas through exploration
AS91631		•	•	•			•	6	Produce working drawings to communicate production details for a complex design

## COMPUTER AIDED MANUFACTURING

<b>Level 1 COMPUTER AIDED MANUFACTURING (CAM)</b>	
<b>Prerequisite:</b>	Completion of Year 10 CAM is preferable
<b>Summary of Course:</b>	This course develops ideas and progression from Year 9 and 10 CAD CAM. Students build on knowledge and work through modular Technology standards using 3D Cad software tools and manufacturing techniques in the workshop to prototype their ideas for research, trialling design ideas and explanation at the NCEA Level 1 Achievement standard.
<b>Fees:</b>	\$30 for take-home materials

Assessment	CI	MT	PI	SI	SC	CR	Credits	Internally assessed
91045							4	Use planning tools to guide the technological development of an outcome to address a brief
91046							6	Use design idea to produce a conceptual design for an outcome to address a brief
91047							6	Undertake development to make a prototype to address a brief
								<b>Externally assessed</b>
91048							4	Demonstrate understanding of how technological modelling supports decision-making.