

Subject Overview

L1 Design & Visual Communication Workshop Technology (Wood) Workshop Technology (Metal)	L2 Design & Visual Communication Workshop Technology (Wood) Workshop Technology (Metal)	L3 Design & Visual Communication Workshop Technology (Wood) Workshop Technology (Metal)
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Design and Visual Communication

1 DVC101 Level 1 NCEA Design & Visual Communication

This course is for anyone that wants a pathway into employment with marketable design skills. DVC is the language of designers, builders, architects, planners, fashion, print media and is in fact an excellent life skill hack. You will be offered the opportunity to learn the design process (D) and then the skills and techniques to visually communicate (VC) solutions to the situations. DVC is the tool/skill that assists clear thinking with logic. NCEA achievement standards that are both Internally and Externally assessed will be used.

Course Components

- Freehand sketching in 2D and 3D to communicate the form of design ideas
- Rendering and Media Techniques to communicate the form of design ideas
- Produce instrumental Pictorial (3D) paraline drawings to communicate design ideas
- Key Orthographic Skills. Produce instrumental, multi-view orthographic drawings that communicate technical features of design ideas
- Design Process. Undertake development of design ideas through graphics practice



INTERNAL CREDITS



EXTERNAL CREDITS



OPEN ENTRY

2 DVC201 Level 2 NCEA Design & Visual Communication

This course is an advancement on Level 1, and for best results, students should have some knowledge of DVC Level 1. Drawing methods will include isometric, oblique, orthographic, perspective, rendering and presentation in both a formal and free-thinking style. Assignments will vary and may range from toy invention to more social problems like housing design or alteration that centre around finding solutions by way of the design process. Evidence for credits will come from work produced throughout the year. Formal drawings may be either traditional or CAD and solutions often can be enhanced with a combination of CAD and word processor, as well as clear freehand sketching.

Course Components

- Freehand Sketching in 2D and 3D use visual communication techniques to generate design ideas
- Advanced Media. Produce working drawings to communicate technical details of a design
- Instrumental Pictorial (3D). Produce instrumental perspective projection drawings to communicate design ideas
- Key Orthographic Skills. Develop a spatial design through graphics practice
- Design Process. Develop a product design through practice



INTERNAL CREDITS



EXTERNAL CREDITS



RECOMMENDATIONS

- 12 Credits in Level 1/
HOD Approval

3**DVC301****Level 3 NCEA Design & Visual Communication**

This course is structured similarly to Year 12. Students undertake a study in key graphic and design skills. Skills will be taught and related to environmental design and product design. Work will revolve around design briefs that will have an assessment task linked to it. Assessments at this level will be contextually linked to the brief outcome. Students will research and interpret design and the elements and principles. Advanced drafting techniques will be part of the course. Students who are contemplating any career linked to Design, Graphics or the Trades, should consider this course.

Course Components

- Freehand Sketching in 2D and 3D
- Advanced Modes and Media
- Instrumental Pictorial (3D)
- Key Orthographic Skills
- Design Process

**12****INTERNAL CREDITS****6****EXTERNAL CREDITS****RECOMMENDATIONS**

- 12 Credits in Level 2

Workshop Technology (Hard Materials – Wood)**1****WS101****Level 1 NCEA Workshop Technology**

This course has a multi-function focus and offers opportunities for the serious student to gain a broad range of construction skills and techniques with the bonus of design and make computer assisted projects as well. The focus will be on making prescribed projects suitable for BCITO credits but also able to expand into design that could incorporate formal drawing methods like Freehand sketching or computer programmes like Sketch-up or Fusion 360. Assessment tasks are a combination of skills and theory.

Course Components

- Construction of simple items like small folding ladder or sawhorse
- Design challenges in problem solving a need for an item
- Instruction to gain a working knowledge of a computer CAD programme
- Opportunity to design and make a personal project
- Opportunity for Whānau or mentor involvement
- Direction for Tertiary, career or University opportunities
- BYOD in the form of a laptop would assist but not essential

**23****INTERNAL CREDITS****NIL****EXTERNAL CREDITS****See note above****CONTRIBUTION REQUEST****RECOMMENDATIONS**

- HOD Approval

2**WS201****Level 2 NCEA Workshop Technology**

This course builds and extends the multi-function focus and opportunities for the serious student to gain a broader range of construction skills and techniques with the bonus of design and make computer assisted projects as well.

The focus is on making prescribed projects suitable for BCITO credits like dart board cabinet, Cape cod chair or similar but also to use the design process that could incorporate formal drawing methods like Freehand sketching or computer programmes like Sketch-up or Fusion 360. Assessment tasks usually incorporate a combination of skills and theory.

Course Components

- Design and construction of some prescribed and some free-choice items
- Design challenges in problem solving a need for an item
- Instruction to gain a working knowledge of a computer CAD programme
- Opportunity to design and make a personal project
- Opportunity for Whānau or mentor involvement
- Direction for tertiary, career or University opportunities
- BYOD in the form of a laptop would assist but not essential

**24****INTERNAL CREDITS****NIL****EXTERNAL CREDITS****See note above****CONTRIBUTION REQUEST****RECOMMENDATIONS**

- HOD Approval

3**WS301****Level 3 NCEA Workshop Technology**

This course caters for five pathways of design and make.

1. BCITO pathway by using tools and machines in the making of a Level 3 project that supports the Level 3 Unit Standards
2. Technology pathway by making projects that are the outcome of the technology process
3. Design pathway by designing and making projects that advance skills and techniques using a range of machines and materials like lathe, CNC cutter, 3D printer or laser cutter
4. Skills knowledge pathway using a range of projects associated with the skill or technique required
5. Design and make with commercial possibilities

Technology achievement standards are possible with all pathways

Course Components

- Project making with verifiable photos to support assessment
- Some assistance will be given but generally material costs will be sought
- BYOD on the form of a laptop would assist but not essential
- Opportunity for Whānau or mentor involvement
- Projects will be at the discretion of school and facilities

**16****INTERNAL CREDITS****NIL****EXTERNAL CREDITS****See note above****CONTRIBUTION REQUEST****RECOMMENDATIONS**

- HOD Approval

Workshop Technology (Hard Materials – Metal)

1

WM101

Level 1 NCEA Workshop Technology (Hard Materials – Metal)

This course is made up of three Level 1 Unit Standards intended to provide students with a well-balanced, practical course that combines basic skills and knowledge. The three core units total 24 credits toward the final qualification. Sixteen additional credits from NCEA or other elective Unit Standards can be used to complete the 40 credits required for the National Certificate.

NOTE: This course has a take-home component, therefore, there will be costs associated with this and will depend on the project or items.

Course Components

The projects will be dependent on the student's needs and could include any of the following

- Tool box, punch set, mini-trebuchet, wind vane, dirt surfer, parallel clamp
- Workshop and Workplace Health and Safety
- Basic Arithmetic and Applied Geometry
- Workshop Processes, Techniques and Tools
- Metals and Plastic Materials Technology
- Fastening, Assembly and Welding Processes
- Simple Design and Construction Methods



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INTERNAL CREDITS



NIL

EXTERNAL CREDITS



See note above

CONTRIBUTION REQUEST



OPEN ENTRY

2

WM201

Level 2 NCEA Workshop Technology (Hard Materials – Metal)

This course involves students completing a variety of Unit Standards and practical projects. This subject could lead to the Level 2 Certificate in Mechanical Engineering and a career in the engineering industry. Students will follow a course of standards in a practical and theory based study that is designed to allow acceptance into an apprenticeship in any of the trades.

NOTE: This course has a take-home component, therefore, there will be costs associated with this and will depend on the project or items.

Course Components

The projects undertaken will be dependent on the student's needs and could include any of the following:

- Model motorbike, dart set, tape dispenser, wheel puller, depth gauge
- Engineering Sketching
- Engineering Materials
- Engineering Hand Tools
- Engineering Measuring Equipment
- Engineering Marking-Out Tools
- Engineering Workshop Safety



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INTERNAL CREDITS



NIL

EXTERNAL CREDITS



See above note

CONTRIBUTION REQUEST



RECOMMENDATIONS

- Level 1 in Metal

This course can be designed around the particular needs of individual students. It could be based on a school or community project. Unit Standards will be selected from the qualifications framework to suit. It could lead to a career in the engineering industry. Students will follow a course of standards in a practical and theory based study that is designed to allow acceptance into an apprenticeship into any of the trades. The project will be dependent on the student's needs and could be a community based project or a personal challenge.

NOTE: This course has a take-home component, therefore, there will be costs associated with this and will depend on the project or items.

Course Components

- Interpret mechanical engineering drawings
- Produce 2D CAD drawings
- Create 3D model
- Knowledge of engineering metals
- Knowledge of the composition of metals



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INTERNAL CREDITS



NIL

EXTERNAL CREDITS



See above note

CONTRIBUTION REQUEST



RECOMMENDATIONS

- Level 2 in Metal

