LEVEL 2 Industrial Design
2TECI

What is this course about?

This course is for students who enjoy solving real-world problems through creative thinking, hands-on making, and original design. You'll explore how everyday products are designed, and develop your own ideas from sketches through to physical prototypes.

Using materials like metal, wood, plastics, or mixed media, you'll design and make functional products based on a need, theme, or challenge that matters to you. Along the way, you'll build practical workshop skills and deepen your understanding of good design — what makes a product work well, look great, and be sustainable.

You'll follow a project-based process where creativity, resilience, and problem-solving are just as important as the final outcome. This course is ideal for students interested in design, engineering, innovation, or trades — or anyone who wants to make things that are both beautiful and useful.

What sorts of things will I do?

This course gives you the opportunity to dive deeper into the full design and manufacturing process through hands-on, project-based learning.

You'll start by researching and analysing existing products to understand how good design works — exploring function, form, materials, and user needs. From there, you'll generate and develop your own ideas using sketching, physical modelling, and feedback to guide your thinking, then bring your concept to life by prototyping it using a mix of workshop and digital tools. You'll learn how to safely work with different materials, apply design thinking to improve your outcome through testing and iteration, and document your entire journey in a portfolio that explains and justifies your design decisions.

By completing this course, you'll gain a strong understanding of the full technological design process. It also prepares you for university entrance with Achievement Standards, and provides a solid pathway into further studies or careers in industrial design, engineering, or the trades.

Learning capabilities/ critical skills

You'll grow a powerful mix of creative and practical skills:

- **Design thinking** – researching, ideating, prototyping, testing, and refining ideas based on user needs.
- **Workshop and material skills** – gaining confidence with tools, materials, and construction techniques.
- **Innovation and originality** – developing your own voice and style as a designer.
- **Critical reflection** – learning to analyse and improve your work at every stage of the process.
- **Communication** – explaining your ideas through sketches, models, prototypes, and visuals.

These skills will set you up for future learning and careers in design, engineering, product development, manufacturing, or any field where creative thinking and making collide.

Nga Rau o Te Whariki o ASHS

Rangatiratanga (self-determination) supports ākonga to achieve. Thinking and meaning-making are promoted. Learning is meaningful and connected.

To experience success, students will have opportunities to develop their learning dispositions through:

Engagement: **Active Information Seeking:** Students will actively seek out information about real-world challenges and innovative solutions in industrial design. **Perseverance:** By persevering through challenges in modelling and prototyping, they learn to overcome obstacles and refine their designs.	Managing self: **Setting Personal Goals:** Students will set personal goals for their projects, from initial sketches to final presentations, ensuring they have clear objectives and aspirations. **Effective Time Management:** Manage their time effectively, ensuring they stay on track and meet deadlines independently. **Resilience and Focus:** Recognize that resilience and focus support the generation of design ideas and the communication of high-quality outcomes.	Learning relationships: **Collaborative Improvement:** Students will work together, and with the teacher, to critique and improve each other's designs, learning from diverse perspectives and providing constructive feedback. **Supportive Dialogue:** Ongoing dialogue with the teacher helps students understand their strengths and areas for improvement, fostering a supportive learning environment.

What standards can I enter?

Your teacher will work with the whole class and with you to devise a learning programme that is responsive to your strengths, interests, and one that sets you up to aim high and achieve your potential.

NCEA	Standard Number	Name of standard	Assessment mode	Credits (W/R)	Time frame
INT	AS 91356	Undertake effective development to make and trial a prototype	Portfolio & Physical Product	6cr	14 weeks Due Mid T2
INT	AS 91344	Implement advanced procedures using resistant materials to make a specified product with special features.	Portfolio & Physical Product	6cr	14 weeks Due Mid T3
INT	US17593	Apply safe work practices in the workplace	Test	4cr	6 weeks End of T1

At Level 2, UE literacy becomes an important qualification for those students with a view to attending university. Level 2 English offers many standards that contain both the reading and writing credits necessary for this qualification.
Key for Credits column: R - UE reading literacy W - UE writing literacy

Frequently asked questions

Does it matter if I have not been in the workshop before?

No, it doesn't matter at all! If you are new to the workshop, there are plenty of tutorials and hands-on activities within the class lessons to help you gain the necessary skills. The workshop is designed to be a learning environment where all students, regardless of their prior experience, can develop their abilities.

Tutorials and Guidance: There will be comprehensive tutorials that cover the basics of using workshop tools and equipment. These tutorials will guide you step-by-step, ensuring you feel confident and capable.
Hands-On Activities: You will engage in various hands-on activities that provide practical experience. These activities are structured to help you progressively build your skills in a supportive setting.
Teacher Support: The teacher will work closely with each student, providing personalised assistance and feedback. This ensures that everyone, regardless of their starting point, can achieve success and become proficient in workshop skills.
By the end of the course, you will have developed the practical skills needed to create innovative and functional designs in the workshop.

Where does this course lead?

This course can lead to University courses related to product design and engineering also building apprenticeships.

Do we just make things?

No, this course is about designing and then making technology outcomes in a range of materials ie. wood, acrylic etc.
You will need to design your product before you can make it and this will need to be completed before any making can occur. During making you will be testing and trialling materials and techniques to analyse what is best for your project and also getting stakeholder feedback. This is part of the design process and makes up a written component of the project

What kind of digital device do I need for this subject?

Because we will be using CAD (computer aided design) software as well as Adobe products you will need a device capable of downloading and running programs. You need to ensure that you have enough harddrive storage and RAM to run additional programs. You will also need to bring a mouse to class - using a trackpad is not ideal for CAD
If your device isn't capable of running the software we have several PCs in class that can be used

Are there any external exams?

No there is not in Industrial Design.