

electrical
apprenticeships

Etco's Pre Trade Course

Students looking to take their first steps towards an electrical apprenticeship can now apply to take part in a 1 year full-time pre-trade course offered by the Electrical Training Company, in collaboration with MIT.

We are New Zealand's leading provider of Electrical Apprenticeships Training and Employment

This programme is the only pre-trade course specifically designed to provide a job to all participants who successfully complete it.

The pilot scheme launched in Auckland involves students studying for the New Zealand Certificate in Electrical Engineering Theory (Level 3).

"Completing the pre-trade and obtaining the Certificate in Electrical Engineering Theory can be the springboard for young men and women to launch their electrical careers," said Electrical Training Company chief executive Jeremy Sole.

- Testing
- Commissioning
- Servicing of electrical installations and equipment
- Fault diagnosis and testing techniques
- How to install and maintain electrical equipment.

"During the course students are also encouraged to complete a minimum 40 hours of relevant work experience – their chance to put what they've learned in the classroom into practice in the real world," said Mr Sole.

"This is an ideal entry pathway for students who have gained Level 1 NCEA and want to train to work in our sector and perhaps then move on to a wide variety of opportunities after graduation. We're confident demand will be high so we're already planning on rolling out this nationwide."

The one-year, full-time course will introduce participants to:

- Safe electrical installation practices

"We are an NZQA Category 1 provider – so students will be supported by passionate tutors who are committed to helping them succeed.

"Once the application is processed, prospective students will be invited for an interview, which is their opportunity to ask any questions they or their family/whanau may have."

To be eligible applicants will need to have achieved the NCEA (Level 1) in Mathematics, English, and Physics or General Science (or equivalent qualifications).

Applications can be made via the Electrical Training Company website – www.etco.co.nz



Young women switching on to a smart career

The electrical industry is no longer just a man's world. A new generation of female electricians is emerging nationwide. And employers are welcoming them with open arms.

And New Zealand desperately needs more electricians. There is a critical shortage of licensed electricians in New Zealand - it's estimated that 3,000 more are needed to meet demand, including in construction.

While women apprentices training with The Electrical Training Company (Etco) – New Zealand's leading training provider for the electrical industry - remain in the minority, those who are pursuing electrical careers are excelling.

Now qualified and licensed, Sarah Pye of



Setpoint Solutions Ltd in Dunedin was one of Etco's top students in 2016, being placed third at the Master Electricians Challenge and winning the Dale Carnegie Highest Award for Achievement.

Like many other electricians, Sarah originally planned to go to university after high school but didn't feel inspired by any of the courses on offer. Nothing really grabbed her, so she decided to do an electrical apprenticeship instead. The big focus on technical skills and problem-solving appealed to her - and she hasn't been disappointed.

Sarah says she has found that people react with a mixture of surprise and curiosity when she tells them what she does for a living. Once they have recovered from the initial shock they usually say 'Oh wow! That's great.'

Sarah has no doubt she made the right career choice. She enjoys working in a wide variety of settings – homes, university buildings, hospitals, hotels and even casinos – and gets huge satisfaction from working

on a project from start to finish. The most satisfying part? Seeing things work. Sarah explains, "It's the best feeling when you've painstakingly set up 100 lights and finally get to switch them on."

All training costs, apprentice salaries, annual leave, sick leave and pay during block release are covered by the Electrical Training Company.

Bianca Pilkington, 20, from Tauranga, says that was a major factor in encouraging her to apply for an electrical apprenticeship, rather than university. "I always wanted a hands-on, practical career and this involves using your brain and earning while you are learning – but I didn't want to go to university and have to run up a student loan. I like the fact that every day is different and every day I'm learning something new. There are no barriers for women in the electrical sector. In the workplace and in training, I get treated just like all the dudes.

Desire Notley, 20, from Napier, is hosted by Hastings-based Direct Earth Electrical and is due to finish her apprenticeship this year.



"I left school in the middle of Year 13 to take up my apprenticeship with the Electrical Training Company," she says. "My main interest at school was textiles but I'd done physics and maths to keep different doors open. I wanted to get a good qualification behind me, but I didn't want a student loan. My careers advisor told me about the apprenticeship.

"It's great being paid while you learn, that was a big driver for me, but I also love the work. Every day is different, and I really like the practical hands-on aspect, and meeting a lot of different people.

Jessica Curtis, 19, from Rotorua, is hosted by local company Integrated Systems Design. "I'm very practical and I really like the hands-on aspect of the learning. At

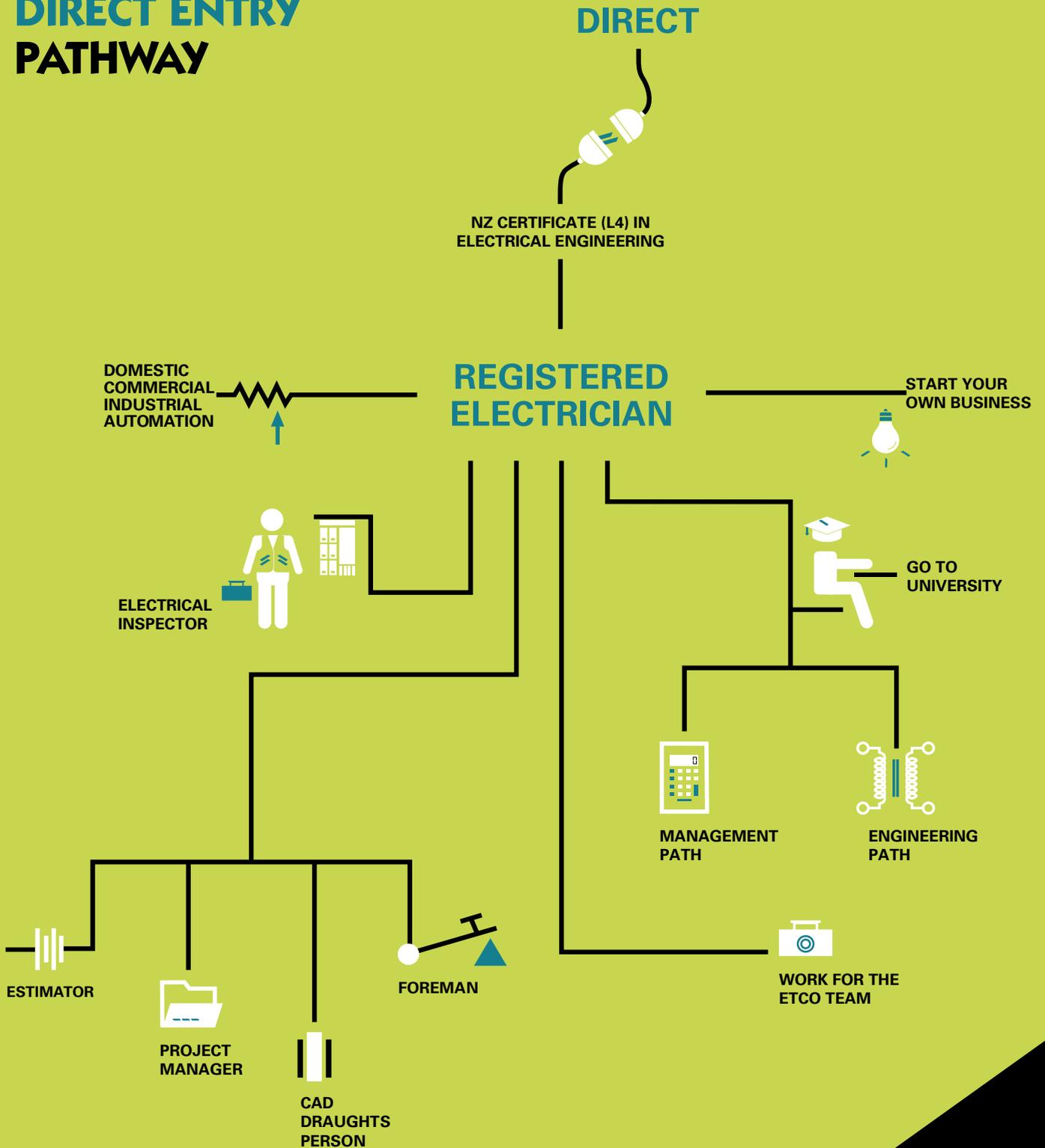


school I took part in a Gateway work experience programme with an automotive mechanic, which I enjoyed, and a teacher suggested I look at electrical apprenticeships and told me about the Electrical Training Company."

"My host company does a lot of automation in places like sawmills," she says. "It's really interesting. I enjoy the fact that every day is different and I'm learning something new every day.

"There are so many opportunities. I'm going to be learning about design work, and my boss also does programming so I'd like to look at that. In future I'd like to do project management and perhaps own my own business one day."

ELECTRICAL DIRECT ENTRY PATHWAY



Visit www.etco.co.nz to find out more about Electrical Apprenticeships.

Ohm's Law Equation

The relationship between voltage, current and resistance can be expressed in a very simple equation which states that voltage is a product of current and resistance.

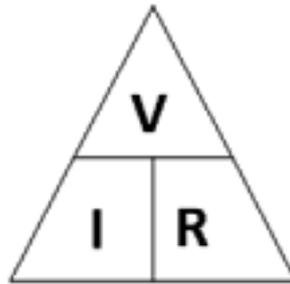
$$V = I \times R$$

This basic equation can be transposed to make either 'R' or 'I' the subject.

$$R = \frac{V}{I} \quad \text{and} \quad I = \frac{V}{R}$$

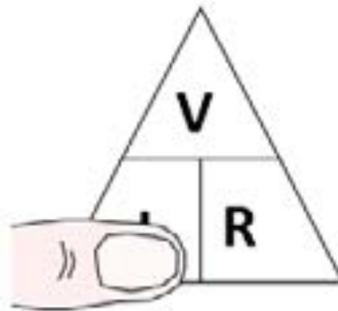
Ohm's Law Triangle

A visual representation of the relationship between voltage, current and resistance can be made using a triangle.



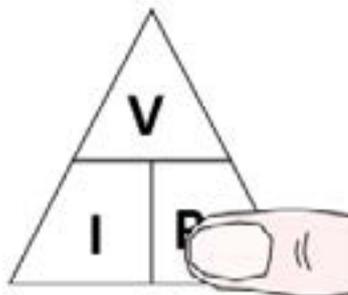
This triangle can be used to determine the relationships between E, I and R. For example, to make 'I' the subject of the equation, cover it up, and then from the triangle.

$$I = \frac{V}{R}$$



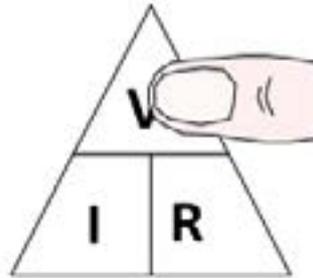
To make 'R' the subject of the equation, cover it up, and then from the triangle.

$$R = \frac{V}{I}$$



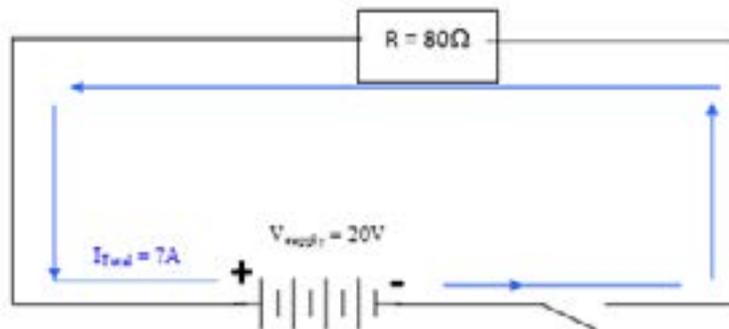
To make 'V' the subject of the equation, cover it up, and then from the triangle.

$$V = I \times R$$



Calculating current

In any d.c. circuit the value of voltage, current or resistance can be calculated, if any two of the three values is known. For example, in the circuit diagram below shows an 80Ω resistor connected across a $20V$ source. To calculate the current in the circuit using the ohm's law triangle, cover up 'I' to determine the relationship.



$$I = \frac{V}{R}$$

$$I = \frac{20}{80}$$

$$I = 0.25 A$$

Use the example above to calculate the values of current for the following problems:

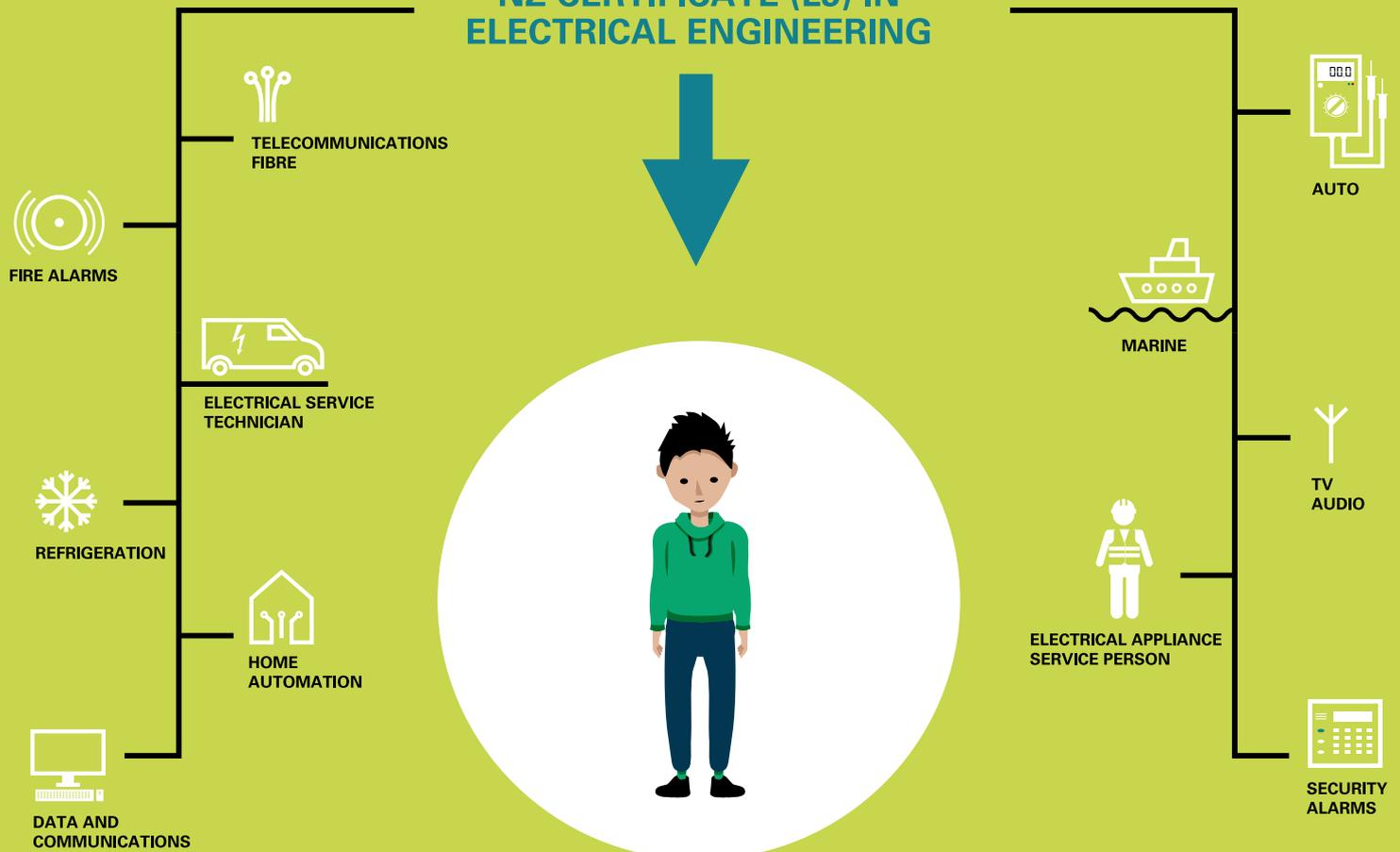
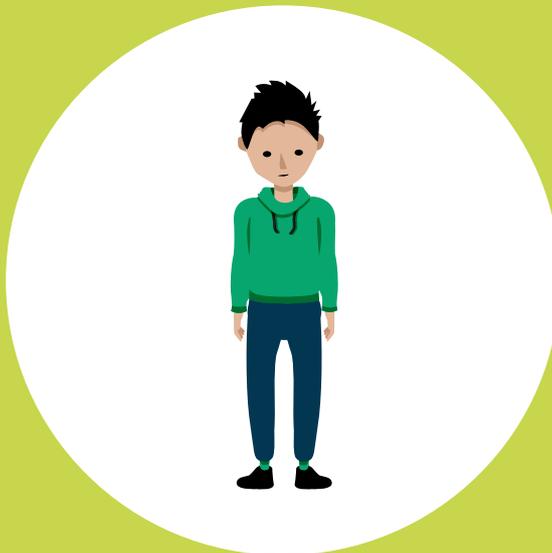
1. If a supply of $100V$ is connected across a resistor of 20Ω , what current will flow through the resistor?
2. A 6Ω resistor is connected across a 15 -volt source, what current will the source have to supply?
3. A toaster element is measured at 115Ω , what current will the element carry if connected to a $240V$ supply?

ETCO ELECTRICAL PRETRADE PATHWAY

STUDENT



NZ CERTIFICATE (L3) IN
ELECTRICAL ENGINEERING



SUCCESSFUL COMPLETION IS A
PATHWAY TO EMPLOYMENT AS AN

ETCO APPRENTICE*

Visit www.etco.co.nz to find out
more about our Pretrade Pathway
to an Etco Electrical Apprenticeship

Etco Special Projects Manager elected to international World Skills Role

The Electrical Training Company staff are the best in the business when it comes to mentoring apprentices – and that’s been recognised internationally.

Luke Boustridge, Special Projects Manager for the Electrical Training Company, has been elected World Chief Expert for the electrical sector for World Skills, the world’s largest trades skills competition.



The election, with voting from delegates from 40 countries, was held at World Skills 2017, which ran in Abu Dhabi late last year.

Mr Boustridge, who lives in Pukekohe and is based at the Electrical Training Company’s Auckland head office, will now lead delegates in international preparations for the next World Skills, to be held in Russia in 2019. He designed the company’s current induction programme and manages its apprentice recruitment team.

“It is a very big job and it is an honour to be elected with a consensus from your industry peers from 40 nations,” he said.

Thirteen hundred young people from 59 countries and regions showcased their talent in 51 skills categories at the 44th World Skills, the biggest event ever held at Abu Dhabi’s National Exhibition Centre (ADNEC).

It was the first time the event had been held in the Middle East and North Africa region and 200,000 visitors attended over the four days.

Mr Boustridge first attended World Skills as a contestant, representing New Zealand in the electrical category in 2007.

“I took on a role as Assistant Technical Delegate in 2009 and then served as New Zealand Electrical Expert and then Deputy World Chief Expert over the next three competitions,” he said.

“The World Chief Expert is responsible for organising the global team who organise the international competition for electrical contestants.”

The Electrical Training Company is New Zealand’s leading provider of electrical apprenticeships and training. Chief Executive Jeremy Sole said: “This is significant achievement and great recognition for Luke’s exceptional leadership qualities and technical knowledge and ability.”

Mr Boustridge also oversaw the New Zealand electrical trade participants at this year’s event, including Auckland-based etco apprentice Chabb Chia, who won a Medallion of Excellence in the Domestic Commercial category.



For more information about World Skills competitions, visit the website www.worldskills.org.nz

Donation of a van for Ara Skills Organisation

The Electrical Training Company has donated a Ford Transit van to Ara - Auckland Airport Jobs and Skills Hub, an innovative scheme dedicated to helping South Aucklanders get jobs and training at or near Auckland airport.

"We had a surplus vehicle and we were delighted to help the Ara programme," said Electrical Training Company Chief Executive Jeremy Sole.

Ara is a joint initiative between the South Auckland community, government agencies, training providers and employers. It connects South Auckland communities with businesses working

at and around Auckland Airport to fill the thousands of jobs in construction, retail, logistics, hospitality.

"While there are huge opportunities in and close to Auckland airport, for many people in South Auckland transport is a real problem. Getting to and from work, which most Kiwis take for granted, can be a real challenge for some. The vehicle we donated will be used to help collect people all across South Auckland."

Auckland Airport's General Manager People and Safety, Anna Cassels-Brown, thanked the Electrical Training Company for their generosity, saying "This fabulous set of wheels will be well used, well cared for and well loved".



If you have any questions, big or small, don't hesitate to contact us on 0800 275 3826 or visit us at www.etco.co.nz

We also provide regular news and updates on our Facebook and Instagram pages. Like and follow us!

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