

CAREERS WITH STEM™

APPRENTICESHIPS + TRAINEESHIPS



Make the switch: moving from real estate to mining p5

Find the most popular STEM VET courses p8

ELECTRICIAN

CAREERSWITHSTEM.COM



Make your trade in mining.

There's more to
**Australian
Mining**

Australia's mining industry provides great opportunities to secure highly skilled, highly paid trade jobs. Our world-class mining workforce is supported by the industry's commitment to safe, sustainable and responsible minerals extraction and processing.

Learn more at: minerals.org.au/careers

GET INTO TRAINING

Wondering what's involved in an apprenticeship or traineeship? Here's the lowdown...



PAUL BENNETT
GM OF MEGT
APPRENTICESHIP
PROGRAM



Looking for more info? Check out Careers with STEM's alternate pathways section: bit.ly/CwSVET

University is great for some, but apprenticeships and traineeships combine the best of both worlds. You get to study at TAFE working towards a VET qualification certificate (see p8), and work on-the-job, learning and earning a wage. In some cases, the government will even cover your training fees. Winning!

Plus, there are more than 500 occupations that offer apprenticeships and traineeships, and a huge number of them are in STEM fields.

Same, same but different

The main difference between an apprenticeship and a traineeship is the time they take to complete. A traineeship is usually one-to-two years and covers careers in business, retail and childcare. Apprenticeships take four years and you'll be qualified for a trade like plumbing or electrical.

Paul Bennett, General Manager of the apprenticeship program at MEGT (a not-for-profit employment organisation), says if you're interested

in an apprenticeship do your research. "Talk to as many people as possible about what the job entails. The first few years involve very entry-level duties."

Find your way

If committing to four years scares you, don't stress. Pre-apprenticeships are short training courses that can give you an idea of what the job's actually like and might give you a leg up in applying for an apprenticeship.

Still at school? Australian School-based Apprenticeships let you start vocational training in the last few years of school, while also getting on-the-job experience.

Looking for an even bigger challenge? "Higher apprenticeships" allow you to complete a diploma or advanced diploma rather than a certificate-level course. – *Chloe Walker*

STUDY PATHS

WHAT IS VET?

VET stands for Vocational Education and Training. Its aim is to partner with industries and the government to equip people with workplace skills and technical knowledge to help them start out in their dream career (or advance in it).

WHY VET?

You get the skills quickly with hands-on experience and it's a cost-effective way to nab qualifications before heading into the workforce. According to training.com.au, "Bachelor degrees can often cost over \$30,000, while TAFE and VET courses are usually much cheaper."

WHERE CAN I STUDY VET?

TAFE and privately operated training providers or colleges.

I LEARN BEST WHEN I'M ACTUALLY DOING SOMETHING RATHER THAN JUST READING IT OUT OF A BOOK"

FISHY BUSINESS

YOU NEVER KNOW WHERE AN APPRENTICESHIP MIGHT TAKE YOU...



LUCAS O'SULLIVAN
DIESEL MECHANIC
APPRENTICE

For diesel mechanic apprentice Lucas O'Sullivan, it's on the rivers of Tasmania. Lucas works at Huon Aquaculture's salmon farm, fixing boat engines and robotic equipment that cleans the nets underwater.

"I've learned about everything from hydraulics to delicate fibre optics and electrical work," he says. "I learn best when I'm actually doing something, rather than just reading it out of a book. It's best to learn the basics thoroughly and then everything is a breeze after that." – *Chloe Walker*

LIGHT VEHICLE APPRENTICE.
MERCEDES BENZ

BUSHWALKING TOUR LEADER.
TAHUNE ADVENTURES

DIESEL MECHANIC APPRENTICE.
HUON AQUACULTURE GROUP



An engineering evolution

WANT TO BE AN ENGINEER? THE COURSES TO GET THERE ARE IN DEMAND. BIG TIME. WE UNPACK THE NON-UNI PATHWAYS TO A CAREER IN ENGINEERING

ENGINEERING AND TECHNOLOGY ARE GOING TO PLAY A HUGE ROLE IN THE FUTURE WORKFORCE"

Engineering is a part of nearly every industry, so it makes sense a majority of STEM-related VET courses – we're talking the second biggest intake across Australia – are in engineering, too. Over 18,000 apprentices in Australia work in metal and engineering, but some of their specialties might surprise you.

Working with metal and machinery is part of many engineering apprenticeships. Fabrication trade apprenticeships are all about welding and machining metal. If assembling, manufacturing, testing and maintaining machines is more your thing, a mechanical trade apprenticeship could be for you.

Electrical tradespeople also start out as apprentices. You could install the wiring in buildings, work with electrical infrastructure underground or overhead, or repair electronic devices like TVs, computers and appliances. Lift mechanics also learn their trade via the Certificate III in Electrotechnology.

Where can it take me?

If you're into cars, you can become a motor vehicle mechanic, but you can go even bigger. What about planes, boats and ships or even submarines? All of the major airlines in Australia offer apprenticeship pathways to becoming aircraft maintenance engineers

\$1.5 BILLION

The Aussie government has announced a massive injection into wage subsidies for bosses to create an extra 100,000 apprenticeships over the next 12 months. Time to get amongst it!



CHRISTINA WEBB
DIGITAL ENGINEERING
APPRENTICE

and submarine company ASC hires electrical, mechanical and fabrication apprentices at mid-year.

Locksmithing, jewellery manufacturing, watchmaking and repair and refrigeration and air conditioning are all traditional apprenticeship pathways within engineering, too.

New trades are also emerging, such as the digital engineering apprenticeships which took off in South Australia this year. Participants in these higher apprenticeships learn about Industry 4.0 skills like automation and robotics, and big data while studying towards a Diploma of Applied Technologies and working with engineers in industry.

Future focus

Christina Webb had one apprenticeship under her belt before embarking on a digital engineering apprenticeship with SAGE Automation, because she wanted to learn more about automation processes.

"Engineering and technology are going to play a huge role in the future workforce," she says. Now, Christina is learning how to create electrical schematics using computer-aided design programs. She was also involved with a project installing sensors in parks and public spaces in Adelaide to monitor water efficiency.

"It's been great to be actively involved in real-world engineering projects," she says. "I've already learned so much."

– Chloe Walker

DIGITAL ENGINEERING
APPRENTICE: SAGE AUTOMATION

ELECTRICIAN,
BIP

ELECTRICAL
APPRENTICE: BIP

ELECTRICAL APPRENTICE,
ALSANTO CONSTRUCTIONS

MINING A SOLID FUTURE

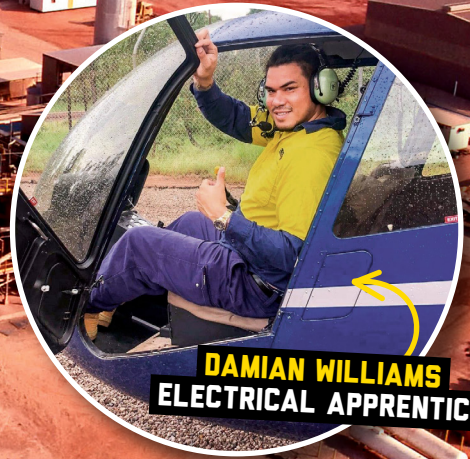
If you have a sense of adventure and enjoy doing technical work, an apprenticeship in mining and resources could be for you

The resources sector has a lot to offer an apprentice graduate. The industry dishes out one of the biggest salaries for Australian industry jobs, loads you up with in-demand skills and presents a shot at seeing more of Australia – with 150 different occupations to choose from in Western Australia alone, we mean serious travel opportunities!

The good news is, all of the big names in mining like BHP, Rio Tinto and Barminto have highly structured – in demand – apprenticeship programs with regular intakes. Last year Alcoa only hired 26 apprentices out of 1699 applicants, but BHP announced 3500 new apprenticeships over the next five years, including 2500 for their FutureFit Academy.

Apprentices in mining and resources often work with heavy machinery in maintenance, parts fitting and electrical roles and with billions of projects in the pipeline there are always jobs to fill.

Damian Williams is a second-year electrical apprentice with gas pipeline builders APA Group in Darwin. “I’ve been to stations and communities I would have never dreamed of visiting. I’ve also been on two helicopter flights, experiences that I’ll cherish forever,” he says. – *Chloe Walker*



DAMIAN WILLIAMS
ELECTRICAL APPRENTICE

I’VE BEEN TO STATIONS AND COMMUNITIES I WOULD HAVE NEVER DREAMED OF VISITING”

AFL PLAYER. GREATER WESTERN SYDNEY

ELECTRICAL APPRENTICE. AKON

ELECTRICAL APPRENTICE. APA GROUP

VET+MINERALS COUNCIL OF AUSTRALIA

BUILD UP YOUR SKILLS

BONNIE ANDERSON
ELECTRICIAN

Glencore’s Queensland Metals business operates copper and zinc sites across Mount Isa, Cloncurry and Townsville, providing work for 4790 people. Their metals apprenticeship program has 169 apprentices, with 25 of them on track to complete dual trades.

SHIFTING GEARS

Bonnie Anderson had worked for four years in real estate but was “itching to get out from behind the desk to do something hands-on. Not many females go down the trade path but my dad has a dual trade and I have family who are tradespeople,” she says.

After completing a Certificate III in Electrotechnology through TAFE Queensland North and Queensland Metal’s Mount Isa Mines, she now works as a fully qualified electrician with the Fixed Plant Maintenance team at Mount Isa Mines. “I intend to complete a dual trade in instrumentation and build on my competencies to be a more accomplished tradesperson,” she says. – *Astha Singh*

CERT III. ELECTROTECHNOLOGY ELECTRICIAN. TAFE QUEENSLAND

ELECTRICIAN. GLENCORE MOUNT ISA MINES

Find out more: bit.ly/glencore-pathways

A HEALTHY CAREER

Healthcare is the **BIGGEST** employer in Australia. Here's how to fast track your path into healthcare with a traineeship

START YOUR CAREER HERE

VET+HEALTH STUDY

Diploma of Nursing, TAFE NSW
 Certificate III in Dental Assisting, Open Colleges
 Certificate III in Individual Support (Aged Care), Health Care Pathways Australia

VET+HEALTH JOBS

Dental assistant: \$40K-\$60K
 Laboratory assistant: \$40K-\$61K
 Aged care worker: \$42K-\$61K*

*Source: salaries according to payscale

RAELENE COLLINS
 NURSING STUDENT

Did you know that the health industry employs the largest number of people in Australia? Over 1.8 million people work in healthcare. And while you do need to go to university to become a doctor, surgeon or other health specialist, there are plenty of interesting opportunities for people with VET qualifications in the wellbeing arena.

"In my traineeship I learned about microbiology and how bacteria affects the human body," says Raelene Collins, a Kuku Yalanji and Garawirra woman, who completed a Certificate III in Laboratory Skills at the Menzies School of Health Research in Darwin in 2019. "I also got to deliver health messages to remote and rural communities and local schools. It was an amazing experience."

Raelene's commitment to her traineeship saw her take out the gong for Aboriginal and Torres Strait Islander Student of the Year.



Nearly 2000 people sign up for a health-related traineeship each year. You could start your career as a dental, nursing or pharmacy assistant, or collect pathology samples. If you're in Victoria, once you've completed a Diploma of Nursing you can go on to become an enrolled nurse through a traineeship, too.

Beyond the hospital there other opportunities in fields like disability and aged care as well. Considering that over the past five years, employment in the health sector has increased by almost 20% there's five times more chances of nabbing a cool career in health. – *Chloe Walker*

I LEARNED ABOUT MICROBIOLOGY AND HOW BACTERIA AFFECTS THE HUMAN BODY"

LABORATORY SKILLS TRAINEESHIP, MENZIES SCHOOL OF HEALTH RESEARCH

LABORATORY TECHNICIAN, MENZIES SCHOOL OF HEALTH RESEARCH

BACHELOR OF NURSING, CHARLES DARWIN UNIVERSITY

Tech's big boom

INFORMATION TECHNOLOGY (IT) SKILLS ARE IN DEMAND AND THERE ARE SOME BIG-NAME OPPORTUNITIES OUT THERE FOR APPRENTICE AND TRAINEE GRADUATES

In just a few years, Australia will need an extra 100,000 workers in the information and computer technology (ICT) field to fill the skill shortage. And according to a recent SEEK report, the job ads just keep increasing. That's A LOT of jobs to fill. It's trainees and apprentices who can help close the gap – and nab a cool career pretty much anywhere in the country.

The Microsoft Traineeship Program launched in 2019 and placed over 100 trainees with employers in Sydney, Canberra, Adelaide and Melbourne in its first year. Trainees work towards a Certificate IV in Information Technology while getting real-life experience. They also get to do some of Microsoft's latest cloud computing certifications.

Alicia Munt was one of the first participants in Canberra, and finished her traineeships at the end of 2020. "I could take the skills I was learning in class and apply them to my everyday



ALICIA MUNT
IT CONSULTANT

work. It also helped me build a network of like-minded people," she says. Other big programs include Accenture's cyber security traineeships in Adelaide, and digital higher apprenticeships. These let you study a diploma-level course while working in IT in the public service, at consulting firms like PwC or in specialist businesses across Australia. "It was a great way to start my career in IT," says Alicia. – *Chloe Walker*

I COULD TAKE THE SKILLS I WAS LEARNING IN CLASS AND APPLY THEM TO MY EVERYDAY WORK"

START YOUR CAREER HERE

VET+IT STUDY

- Certificate IV in Information Technology, TAFE (see your state)
- Certificate I, II or III in Information, Digital Media and Technology, Charles Darwin University
- Diploma of Database Design and Development, Training.gov.au

VET+IT JOBS

- Computer technician: \$38K–\$66K
- User support technician: \$43K–\$73K
- Systems administrator: \$51K–\$90K*

*Source: salaries according to payscale.com

TEAM MEMBER.
WOOLWORTHS



SALES ASSISTANT.
SANITY



MICROSOFT TRAINEE.
OOBE



ASSOCIATE CONSULTANT.
OOBE

GO YOUR OWN WAY

Discover paths into apprenticeships in IT, health, mining, engineering + more!

IT HERE'S JUST A FEW PATHS INTO DIGITAL TECHNOLOGIES AND CYBER SECURITY...

- >> Advanced Diploma of Information Technology Project Management
- >> Certificate IV in Cyber Security
- >> Certificate I, II or III in Information, Digital Media and Technology
- >> Certificate IV in Information Technology
- >> Certificate IV in Screen and Media (Interactive Media)
- >> Certificate IV in Spatial Information Services
- >> Diploma of Database Design and Development
- >> Diploma of Information Technology
- >> Diploma of Information Technology Networking
- >> Statement of Attainment in Introduction to 3D Printing and Design
- >> Statement of Attainment in Introduction to Robotics and Coding

ALSO CHECK OUT

Australian Government Digital Transformation Agency – Digital Apprenticeships: bit.ly/GovDTA_Apprenticeships

HEALTH HERE'S JUST A FEW PATHS INTO HEALTHCARE...

- >> Certificate IV in Ageing Support
- >> Certificate IV in Fitness
- >> Certificate III in Health Administration
- >> Certificate IV in Leisure and Health
- >> Certificate IV in Medical Practice Assisting
- >> Diploma of Mental Health
- >> Diploma of Nursing
- >> Diploma of Practice Management
- >> Diploma of Work Health and Safety
- >> Statement of Attainment in Medical Records Coding

ALSO CHECK OUT

Health Industry – Australian Apprenticeship Pathways: bit.ly/HealthAustAppshp

MINING HERE'S JUST A FEW PATHS INTO RESOURCES + MINING...

- >> Certificate III in Civil Construction Plant Operations
- >> Certificate II in Drilling Operations
- >> Certificate III in Electrotechnology Electrician
- >> Certificate III in Mobile Plant Technology
- >> Certificate III in Underground Coal Operations

ALSO CHECK OUT

My Skills Construction & Mining: bit.ly/MySkillsCon_Min

ENGINEERING HERE'S JUST A FEW PATHS INTO ENGINEERING...

- >> Advanced Diploma of Engineering (Mechanical)
- >> Certificate II in Aeroskills
- >> Certificate III in Engineering – Fabrication Trade
- >> Certificate III in Engineering – Mechanical Trade
- >> Certificate II in Engineering – Production Technology
- >> Certificate IV in Maritime Operations
- >> Diploma of Air-conditioning and Refrigeration Engineering
- >> Diploma of Electronics and Communications Engineering
- >> Diploma of Engineering – Advanced Trade
- >> Diploma of Engineering – Technical
- >> Undergraduate Certificate in Renewable Energy Engineering

ALSO CHECK OUT

Become an engineering apprentice: AGA Apprenticeships Plus: bit.ly/AGAEngApp
Australian Apprenticeship Pathways – Manufacturing and Engineering: bit.ly/AAPathMan_Eng

OTHER STEM

Visit *Careers with STEM's* vocational education and training pathways page for more info on STEM apprenticeships, traineeships, study options and to read about other people's paths into STEM careers. bit.ly/CwSVETApp