Associate Degree of
Applied Engineering
(Renewable Energy Technologies)
“It’s an always-changing industry. So learning about new products within it is inspiring.”
Matthew Genco
graduate

Associate Degree of Applied Engineering
(Renewable Energy Technologies)

This two year program gives students access to an industry recognised qualification, leading to a new and exciting career as a skilled para-professional in the fast-growing renewable energy technologies sector.

It provides students with the knowledge required by Engineers Australia to work within the industry, as well as practical experience through professional experience placements arranged by Sydney TAFE.

There is a choice of specialisations reflecting the diverse opportunities available within the industry – from the process of conversion and storage of energy, to infrastructure and associated electrical and mechanical engineering activities.

Students can also use the program as a pathway into the third year of a bachelor degree in renewable energy technologies at the University of Newcastle.

Graduates of the course will have the knowledge and practical skills required to work as a para-professional in the renewable energy sector, in government, corporate, environmental and small business enterprises.
With a recognised skills shortage in all engineering professions, including electrical, mechanical, and civil engineering, an opportunity exists for tradespeople with experience in environmentally sustainable energy design and implementation to be part of an expanding employment sector.

The Clean Energy Council forecasts long-term growth in the sector, and our Associate Degree program offers graduates the chance to further their experience and move into a range of engineering-related positions (some requiring further study), including:

- civil engineer specialising in renewable energy
- electrical engineer specialising in renewable energy
- engineering associate
- mechanical engineer specialising in renewable energy
- solar power engineer
- solar power technician
- sustainable energy consultant.

The associate degree also provides a pathway into the third year of the Bachelor of Engineering Technology (Renewable Energy) at the University of Newcastle and provides the underpinning body of knowledge required by Engineers Australia.
Why study at Ultimo College?

Sydney TAFE’s Ultimo College is located in one of Sydney’s strongest education, cultural and entertainment precincts – near Central Station, UTS, the ABC, Sydney University, Chinatown and the Sydney CBD.

The largest TAFE College in NSW, offering over 700 courses for every need – it gives you a city life, city atmosphere, and city study.

Sydney TAFE creates success

The Associate Degree offered by TAFE NSW Higher Education and Sydney TAFE will give you the combination of practical and theoretical knowledge you need to develop a rewarding career.

The analysis and research methods you will learn will put you in an excellent position, whether you want to continue immediately on your career path or pursue higher level study.

You will even apply your skills and knowledge in a real workplace as part of your coursework.

Your learning environment

The Associate Degree of Applied Engineering (Renewable Energy Technologies) teaches a combination of hands-on and theoretical knowledge and skills.

The essential body of knowledge covered is:

- Engineering Foundations
- Engineering Professional Practice
- Electrical Engineering
- Mechanical and Civil Engineering
- Renewable Energy Technologies.

Your study will be supported by the development of academic writing and research skills. Computer use, software applications and engineering technologies are also integrated into the course.

The ‘classroom’ emphasis will be on participation, teamwork and simulated performance-based activities. Where possible and appropriate, online learning will be included.

Professional experience

Sydney TAFE teaching staff will help arrange your work placement for you – the equivalent of six 35-hour weeks or 210 hours of professional experience – in a relevant engineering workplace.

This is a crucial part of the program and will:

- give you a greater understanding of work-based sustainable engineering practices
- help you develop teamwork and collaborative skills
- provide a holistic understanding of the management of projects within a professional framework
- give you a chance to put your skills into practice and to further refine them
- help you decide on your further options
- let you show employers what you have to offer.

If you are already employed in a relevant engineering workplace, you still need to complete this formal professional experience, although your current workplace may also be your host employer for the professional experience placement.
Facilities

Sydney TAFE facilities are state-of-the-art, industry-standard facilities so you’re ready for any workplace, including:

> Specialist simulators
> Industry standard software
> A mini hydroelectric system
> Wind generator
> A range of renewable energy training facilities.

Our learning environments are as industry-realistic as possible with equipment currently used by modern industry enterprises.

Your study experience will also benefit from the extensive college facilities that include:

> excellent library facilities
> the latest engineering and renewable energy technology tools and equipment
> cafés
> and a range of student services including academic transitions skills, personal and career counselling, study support, literacy and numeracy support, multicultural services and childcare.

“Students come to this college knowing that it allows them to go out into industry, become creative, become innovative, and become industry leaders”

Greg Riach  
teacher
Course structure

The Associate Degree of Applied Engineering (Renewable Energy Technologies) gives you a choice from two specialisations: Electrical Engineering, and Mechanical and Civil Engineering. The program is structured over four semesters, with full-time students required to complete four subjects per semester.

Year 1: Foundation Engineering

**Semester 1**
- Introductory engineering maths and physics
- Principles of electrical engineering 1
- Engineering materials and processes
- Foundation studies in renewable energy and sustainability

**Semester 2**
- Foundation engineering maths and physics
- Foundation mechanical and civil engineering principles
- Engineering practices
- Grid connected photovoltaic power systems (Electrical Engineering specialisation subject) OR Solar and thermal energy systems (Mechanical and Civil Engineering specialisation subject)

Year 2: Engineering Development

**Semester 1**
- Intermediate engineering maths and physics
- Energy storage systems
- Advanced electrical engineering (Electrical Engineering specialisation subject) OR Renewable energy resource analysis (Mechanical and Civil Engineering specialisation subject)
- Principles of electrical machines (Electrical Engineering specialisation subject) OR Advanced mechanical and civil engineering principals (Mechanical and Civil Engineering specialisation subject)

**Semester 2**
- Advanced engineering maths and physics
- Engineering management
- Wind energy conversion systems
- Design professional practice
- Electronics and power control (Electrical Engineering specialisation subject) OR Energy systems efficiency (Mechanical and Civil Engineering specialisation subject)

Eligibility and entry requirements

To apply for this course, you must have completed one of the following:
- NSW Higher School Certificate (HSC) or equivalent - including Mathematics at Band 5 or above, or Mathematics Extension 1. If you have not achieved the mathematics minimum, you may undertake the Mathematics and Science for Further Study (29601) course
- a recognised Tertiary Preparation Certificate (TPC)
- a qualification at Certificate IV level or above
- at least one year’s full-time study or equivalent in a degree course at a higher education institution
- People who do not meet the entry requirements, and are aged 21 or older, may apply on the basis of mature age.

Students whose first language is not English must also demonstrate English proficiency at a minimum IELTS level of 6.5, with a minimum level of 6 in any one band.
Your course, your campus, your services

Learner and study support
From study assistance to planning your timetable, we will work with you to ensure you get the most out of training programs.

Career and personal counselling
Whether it is career guidance or help with personal matters – including health, finances and relationships – Sydney TAFE counsellors offer a free confidential service that is easy to access.

Indigenous student support
Talk with an Aboriginal Coordinator or Aboriginal Support Officers about study assistance, support with enrolment and any other issues.

Disabilities support
Students with disabilities have equal access to training. We will make sure you have the most appropriate classroom support, that modifications are made when appropriate, and we also offer a range of services such as tutorial support, sign language interpreters, note-takers and disability assistants.

Multicultural services
Multicultural Education Coordinators can help you with a range of support services, from advice and support to interpreting.

Child care
Ultimo College has a long day care centre on campus.

“It opened up a door for me to walk into my dream career. Thank you Sydney TAFE.”
Nathan Fu graduate
Drop in

Sydney TAFE Information Centre
827-839 George Street, Sydney, NSW
Just a short walk from Central Station
(opposite Railway Square)

Contact us

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Sydney.degree@tafensw.edu.au

Visit us online

sydneytafe.edu.au/degrees

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While Sydney TAFE has made every reasonable effort
to ensure that information in this Guide is accurate
at the time of publication (September 2014), some
changes to course programs may occur as they are
updated, added or replaced. For the most up to date
information go to our website sydneytafe.edu.au or
call our information centre on 1300 360 601.