

What can I do with my TAFE qualification? Engineering and Technology



** Please note – the information contained in this handout is accurate as at January 2011.
Information regarding employment prospects/salary/growth is based on information derived from
www.skillsinfo.gov.au, www.joboutlook.gov.au and Careers and Employment's own research.

2011

Please note: the information contained in this document was current as of January 2011. Refer to www.swinburne.edu.au/courses/ for the most recent updates. Refer to the School of Engineering and Technology website www.tafe.swinburne.edu.au/engineering/ for further information and a list of the courses offered in this area.

Industry Overview

Studies in Engineering and Technology can provide a range of careers for those interested in making things work. If you are interested in inventing, creating, maintaining and improving areas and materials used in modern life, if you are good at maths and science, enjoy solving problems and are technically minded, then consider a career in Engineering or Technology.

Given the variety of study areas that come under the Engineering and Technology umbrella, there are numerous potential employment outcomes for Swinburne TAFE graduates. Students can complete courses in a range of areas including:

- Automotive
- Brick and Block Laying
- Building and Construction
- Computer Systems Engineering
- Electro technology - Electrical, Electronics and Communications
- Engineering Technology
- Fire Fighting, Fire Protection and Technology
- Manufacturing and Renewable Energy Technology
- Painting and Decorating
- Plumbing
- Transport and Logistics

For further market and industry information relating to your discipline, please refer to:

- www.deewr.gov.au
- www.jobguide.deewr.gov.au
- www.joboutlook.gov.au
- www.myfuture.edu.au
- www.skillsaustralia.gov.au
- www.skillsinfo.gov.au

Automotive

Students wishing to gain automotive skills, or upgrade their skills in specific automotive technologies, can complete a range of courses. Automotive mechanics can work in automotive workshops, dealerships, service stations or as independent contractors. The work of an automotive mechanic focuses on the diagnosis, service and repair of electronic vehicle systems and in the maintenance and repair of major vehicle components such as brakes, clutches, mufflers, transmissions, gearboxes and other parts. This is a suitable employment sector for those who are interested in practical and manual work, have a technical aptitude and well developed problem-solving skills.

Automotive and Engineering Trades is the tenth largest occupational cluster in Australia, with 359,200 employed persons (or 3.3% of the total workforce) as at May 2010. Job prospects specifically for Motor Mechanics are currently good.

Job titles may include the following:

- Automotive Specialist
- Consultant / Advisor
- Motor Mechanic
- Parts Manager
- RWC Tester
- Service Centre Manager
- Vehicle Mechanic
- Workshop Manager

Building

Swinburne offers a range of courses in Building and Construction ranging from Pre-Apprenticeships which provide students with an introduction to the field; through to the Diploma course, which is suited to existing builders, project managers and site managers who want to further their skills in medium rise construction. Employment prospects in Building and Construction are currently considered to be average, however, with good growth expected across 2014-15.

Job titles may include the following:

- Apprentice Builder
- Apprentice Carpenter
- Architectural Technicians
- Builder
- Building Contractor
- Building Designer
- Building Technician
- Carpenter
- Construction Labourer
- Contract Administrators
- Drafter
- Project Manager

Computer Systems Engineering

There are a range of TAFE computer systems engineering courses offered at Swinburne which provide technical opportunities across industries such as mining, telecommunications, transport, entertainment, medical electronics and in the public sector. Graduates often work assisting electrical engineers in design, maintenance and production.

Job titles may include the following:

- Design Technicians
- Engineering Technicians
- Equipment Technicians
- Maintenance Technicians
- Production Technicians
- Service Technicians
- Technical Support Officers

Electro Technology – Electrical, Electronics and Communications

Swinburne offers a range of TAFE courses in the electro technology field incorporating electrical and electronics and communications. In the electrical area there are courses ranging from Pre-Apprenticeships which provide students with an introduction to the field; through to an Advanced Diploma course which is suited to existing electricians who want to further their skills in system design and renewable energy.

Electricians work in industrial, commercial and domestic sectors and may also work on electrical transmission and distribution equipment or specialise in certain industries. Job prospects for Electricians are good. Employment for Electricians to 2014-15 is expected to grow very strongly. Graduates can gain employment with small, medium and large businesses, or may also choose to start their own business.

Job titles may include the following:

- Apprentice Electrician
- Cable Installer
- Electrician
- Electrical Technician

Electronics and communications courses provide students with an understanding of the interface between electronics and computers, control and monitoring equipment across almost every industry. Graduates of these courses may gain employment as a technical officer or electrical engineering associate that performs planning, design, analysis, supervision or engineering liaison, usually between the trade level and technologist level. Electrical engineering associates may also specialise as technical officers, electrical engineering design drafters, substation design officers and power-system controllers. Other opportunities include manufacturing, maintenance and design of industrial and medical equipment.

Job titles may include the following:

- Electronics Technician
- Installer
- Maintenance Technician
- Repairer
- Service Technician
- Technical Consultant
- Telecommunications Technician

Engineering Technology

Swinburne TAFE Engineering Technology courses allow students to progress to a wide range of roles from entry level to supervisory positions. There is the opportunity to specialise in the mechanical, robotics and mechatronics areas, equipping graduates with the skills and training for mechanical and manufacturing control careers.

Graduates may work at a para-professional level as a mechanical engineering associate or technical support officer in the engineering field, under the direction of mechanical engineers and technologists. Tasks include assisting in the design, manufacture, construction, operation and maintenance of manufacturing equipment, machines and mechanical facilities. It is possible to specialise in areas such as building services, mechanical handling (involving cranes, lifts, conveyors and transfer lines), tools (associated with most manufacturing plants) and consumer products.

Job prospects for Mechanical Engineering Draftspersons, Technicians are below average. Employment for Mechanical Engineering Draftspersons, Technicians to 2014-15 is expected to decline. Employment in this very small occupation (3300 in November 2009), fell in the past five years, and fell markedly in the long-term (ten years), but with very small occupations, employment estimates can fluctuate.

Job titles may include the following:

- Apprentice
- Computer Aided Draftsperson
- Cost Estimator
- Fabricator
- Lathe Operator
- Machine Operator
- Maintenance Worker
- Manufacturing Supervisor / Team Leader
- Manufacturing Worker
- Metal Trades Worker
- Production Assistant
- Production Planner
- Purchasing Officer
- Quality Assurance
- Welder

Public Safety Fire Fighting / Fire Protection

Swinburne offers a range of TAFE courses relating to public safety, fire fighting and related fire safety areas. Graduates of Public Safety (Fire Fighting) courses may find employment in the fire fighting industry as a general fire-fighter or aviation fire-fighter. However, there are no direct employment links from the courses, students should contact the relevant employers for recruitment information.

The vacancy level for fire and emergency workers is currently very high; however currently employment prospects for Fire and Emergency workers are average and are expected to grow moderately during 2012-2015.

Graduates of Fire Protection courses develop skills to maintain fire protection equipment such as portable fire extinguishers and fire blankets and install and maintain equipment such as portable fire fighting equipment and foam fire suppression systems. Graduates may work maintaining and inspecting all types of hand-held fire extinguishers and fire hoses, including finding, reporting and replacing defective parts.

Manufacturing

There are a range of courses available in the Competitive Manufacturing areas which are focused on continuous improvement principles and practises. The courses will provide students with efficient techniques for cost reduction, quality and delivery time improvement, staff morale building, and safe and environmentally sustainable business operations.

Job titles may include the following:

- Continuous Improvement Agent
- Manufacturing Supervisor
- Team Leader

Renewable Energy Technology

Renewable energy (energy generated from natural resources that is naturally replenished) is an essential part of Australia's low emissions energy mix. Swinburne delivers niche courses in renewable energy technologies through the National Centre for Sustainability. Engineers, consultants and business professionals will find components of the Electrotechnology Renewable Energy course beneficial in their design and consulting work. Tradespersons such as builders, plumbers and electricians will develop skills to help with successful installations. Other areas of employment include engineering, sales, local government, system design, installation, gardening and building.

Graduates of the Sustainable Energy course will gain the knowledge and skills to conduct sustainability assessments in domestic and small scale contexts, design resource efficiency technologies (such as solar hot water systems) and work in policy and planning roles for non-government organisations.

Painting and Decorating

Swinburne offers a pre-apprenticeship course and the training component of a painting and decorating apprenticeship. Students develop skills in painting and decorating including hand skills, surface preparation, scaffolding, application, paint types and uses. Job prospects for painting trades workers are average and employment is expected to grow slightly over the next five years.

Job titles may include the following:

- Apprentice Painter and Decorator
- Qualified Tradesperson
- Self Employed Contractor

Brick and Block Laying

Swinburne offers a pre-apprenticeship course and the training component of a brick and block laying apprenticeship. Students develop skills in the theoretical and practical elements of the bricklaying trade. Bricklayers lay bricks, pre-cut stones and other types of building blocks in mortar to construct and repair walls, partitions, arches and other structures, and cut and shape hard and soft stone blocks and masonry slabs for the construction and renovation of stone structures and monumental masonry. Job prospects for Bricklayers and Stonemasons are good, however, longer term prospects over the next five years are expected to decline.

Job titles may include the following:

- Apprentice
- Bricklayer
- Bricklayer Assistant
- Self Employed Contractor.

Plumbing

Swinburne offers a range of plumbing courses from pre-apprenticeship, to the training component of a plumbing apprenticeship and courses which provide the licenses to work in specialised sectors of plumbing and services. Plumbers install, maintain and repair pipes, drains, guttering and metal roofing, mechanical services and related equipment for water supply, gas, drainage, sewerage, heating, cooling and ventilation systems. Job prospects for plumbers are good and employment over the next five years is expected to grow strongly.

Job titles may include the following:

- Apprentice
- Registered Plumber
- Licensed Plumber

Areas include: sanitary, drainage, roofing, mechanical services, gas fitting and water supply

Further Study and Pathways

For a full list of credit pathways and requirements see the Swinburne website:
www.future.swinburne.edu.au/pathways

For entry and admission requirements: www.swinburne.edu.au/courses

References and Relevant Websites

- www.joboutlook.gov.au
- www.myfuture.com.au
- www.apesma.asn.au
- www.engineersaustralia.org.au
- www.autocareers.com.au
- *Australian Jobs for Workplace 2008*, Department of Education, Employment and Workplace Relations

What help does Swinburne Careers and Employment offer?

Career Services

- Career Counselling for Students
- Plan Skills Development
- Career Seminars/Workshops for Students
- Resume and Cover Letter Checks daily at Hawthorn 1:30pm-2:30pm, please refer to website for other campus days.
- Interview Practice daily at Hawthorn at 3:00pm sharp, please refer to website for other campus days.

Career Resources

- Career Resource Library
- Job Search Handouts
- Interactive Career Planning
- What Can I Do With My TAFE Qualifications/ Degree? (see website for resource)

SwinEmploy Employment Service

- All job advertisements for graduate placements, casual, vacation, part-time and full-time employment
- Links to employer websites
- Enables students to book online for events such as workshops, employer information sessions and interviews
- Access to Going Global (over 10,000 job vacancies listed across Europe, Asia-Pacific, UK and US. Global key employer directories, work permits & visa regulations, country-specific cultural & interviewing advice & more).

Download Careers and Employment job search handouts from SwinEmploy, including:

- Addressing Selection Criteria
- Assessment Centres
- Cover Letters or Letters of Application
- Curriculum Vitae or Resume
- Employer Expectations of Graduates
- Interviews - How to Plan, Prepare and Perform
- Informational Interviewing
- Job Hunting
- Networking: What Is It and How Do You Do It?
- Online Applications
- Psychometric Tests
- Skills and Attributes
- Thinking About Changing Your Course?
- Tips for facing the work environment and your first professional job

Careers & Employment

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