

ENGINEERING PROFESSIONALS



JOB PROSPECTS

At a glance



There is a shortage of engineering professionals in New Zealand, and new graduates are in high demand. Many engineering jobs are on Immigration New Zealand's skill shortage lists; this means the government is encouraging engineering professionals to migrate to New Zealand. IPENZ particularly encourages women to consider a career as an engineer. Engineering provides exciting career opportunities.

Civil, geotechnical and structural engineers are especially in demand due to the rebuilding of Christchurch.

■ How to become an engineering professional

An engineering professional designs, builds, or maintains structures, machines, devices, systems, materials and processes.

Engineering professionals specialise in a particular sub-discipline. For instance, electronics engineers study, design and oversee production of electronic equipment, while civil engineers design, plan, organise and oversee the building of infrastructure. Other sub-disciplines include electrical, industrial, mechanical and chemical engineering.

Qualifications

The Institution of Professional Engineers New Zealand (IPENZ) is the professional body and registration authority for engineers in New Zealand.

There are several pathways to becoming a professional engineer. The most common way is to complete a four-year Bachelor of Engineering (BE) degree and seek employment as a BE-graduate. After typically five or six years work experience, graduates are often able to demonstrate competence as professional engineers and gain registration as a Chartered Professional Engineer (CPEng registration).

Other alternatives are to complete a Bachelor of Engineering Technology (BEngTech) degree as an engineering technologist, or a Diploma of Engineering as an engineering technician; and then develop higher levels of knowledge (usually with additional tertiary study) and skill while working.

After several years' employment with appropriate supervision, mentoring and suitable work experience, engineering technologists or engineering technicians may undertake competence assessment for professional engineer quality marks (such as CPEng registration). This pathway takes much longer to acquire the levels of competence required of a professional engineer, but is an option if opportunities for university study are not available or affordable early in a person's career.

Often, professional engineering qualifications have strict academic prerequisites for entry, and a limited number of places.

IPENZ accreditation provides graduates with the added benefit of enhanced international recognition of their engineering qualification.

The Futureintech website (operated by IPENZ) is designed to promote careers in engineering. It has a great deal of information about engineering, including: qualification pathways for engineering students, subjects that should be taken in school to prepare for a qualification in engineering, and information on scholarships and cadetships

→ Futureintech: www.futureintech.org.nz/pathways/engineering-qualification-pathways.cfm

Cost of study

Bachelor's Degree in Engineering

\$19,500–\$28,800 over 3–4 years

Average costs in 2014 for a domestic student. Costs vary between institutions. Further costs include materials, textbooks, and accommodation.

Rents vary from place to place. Estimated market rents by region, city and suburb are available on the MBIE Building and Housing website.

The StudyLink website provides general budget advice for students, and the Sorted website provides help with detailed budget planning.

→ MBIE Building and Housing: www.dbh.govt.nz/market-rent

→ StudyLink: www.studylink.govt.nz

→ Sorted: www.sorted.org.nz/calculators/money-planner

Where to study

The Futureintech website provides a comprehensive list of all professional engineering courses in New Zealand. The IPENZ website provides a list of qualifications that have been accredited as meeting internationally benchmarked standards.

→ Futureintech: www.futureintech.org.nz/search.cfm

→ IPENZ: www.ipenz.org.nz

ENGINEERING PROFESSIONALS

Chartered Professional Engineer

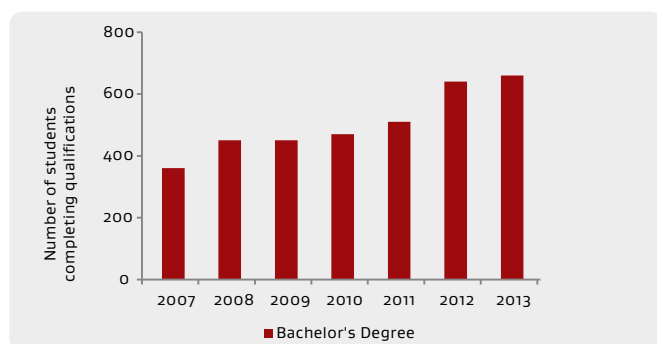
A qualified professional engineer may choose to become a Chartered Professional Engineer (CPEng), which is recognised as a quality mark for independent practice as a professional engineer.

To be registered as a CPEng, a professional engineer must:

- undertake an assessment of competence by the Registration Authority to gain initial registration; then undertake additional assessments at least every six years to retain registration
- agree to be bound by the CPEng Code of Ethical Conduct.

Completed qualifications

The number of students completing a Bachelor's degree in engineering or related technologies has shown a slow upwards trend in recent years.



Source: Ministry of Education

Income and employment prospects

Income

The median salary for graduate engineers was \$60,000. For engineers with an independent practice, the median was \$83,900.

The salary increases with responsibility and seniority.

Estimated median base income by career stage	
Graduate	\$60,000
Independent Practice	\$83,900
Team Leader	\$108,000
Technical Manager	\$136,000
General Manager	\$175,000

Median base income for IPENZ member employees. From IPENZ Remuneration Survey 2014.

Employment and skill shortages

Professional engineers' employment

Current		Projected growth	
2013	2014	2013-18	2018-23
21,500	21,100 down 1.9%	3.8% per year	3.2% per year

If a job appears on Immigration New Zealand's long-term skill shortage list, it means the government is actively encouraging skilled people in the role to come and work in New Zealand. There are a large number of specific occupations in professional engineering on the list and the Canterbury skilled shortage list, including civil engineer, structural engineer and electrical engineer. A full list is available on the Immigration New Zealand website.

→ Immigration NZ, skill shortage list:
skillshortages.immigration.govt.nz

We expect there to be continued demand for civil, electrical, and structural engineers in the Canterbury region as the rebuild of Christchurch continues.

Where to find job vacancies

The number of online job vacancies for civil engineers increased by 19.0% from June 2013 to June 2014. This compares with an overall increase of 16.5% for all skilled vacancies over the same period.

Engineering professionals' vacancies are advertised through public media such as the Trade Me Jobs and Seek websites.

→ Trade Me Jobs: www.trademe.co.nz/jobs

→ Seek: www.seek.co.nz

Career path

Most engineering professionals start out as graduate engineers. They work under more senior engineers to gain experience and an understanding of the job.

With greater seniority, engineers may become part of, or gain responsibility for, larger and more complex projects. They may also take leadership and supervisory roles.

Other information

Links

More information on engineering professionals is available on the Careers New Zealand website.

→ Careers New Zealand: www.careers.govt.nz

→ Institution of Professional Engineers New Zealand:
www.ipenz.org.nz/ipenz