

... design, organise and oversee the construction, operation and maintenance of mechanical and process plant and installations, establish programs for the coordination of manufacturing activities, and ensure usage of resources is cost effective.

Indicative Skill Level

Most occupations in this unit group have a level of skill commensurate with a Bachelor degree or higher qualification. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification (ANZSCO Skill Level 1).

Skilled Occupation Criteria

Long-lead time

Industrial, Mechanical and Production Engineers meet the criteria for long lead time, as entry to this occupation requires a substantial training commitment.

- ▶ Employment as an Industrial, Mechanical or Production Engineer generally requires the completion of a university qualification of at least four years study (full-time equivalent), such as a Bachelor of Engineering (Mechanical Engineering).

High use

Industrial, Mechanical and Production Engineers meet the criteria for high use, showing that the skills which people have acquired through education and training are being deployed for the uses intended.

- ▶ Based on advice from Universities Australia, university courses in industrial, mechanical and production engineering have a strong degree of match with eventual employment in engineering occupations.
- ▶ Of new graduates employed as Industrial, Mechanical and Production Engineers, 85% had studied a related field, such as engineering and related technologies (*Australian Graduate Survey, 2009*).
- ▶ As professionals, Industrial, Mechanical and Production Engineers are expected to have a level of skill commensurate with a Bachelor degree or higher qualification. Of those employed as Industrial, Mechanical and Production Engineers, 86% were found to possess this level of skill (*ABS Survey of Education and Work, 2010*).¹

High risk

Industrial, Mechanical and Production Engineers also meet the criteria for high risk/high disruption. This indicates that the occupation is important for the effective operation of an enterprise and/or the broader economy.

- ▶ Industrial, Mechanical and Production Engineers are required to be registered or licensed in some states and territories, such as Queensland and Tasmania.
- ▶ Industrial, Mechanical and Production Engineers are important to meet government policy priorities in sustainable energy systems, such as the Clean Energy Initiative, the Carbon Capture and Storage Program and the Advanced Electricity Storage Technologies

¹ Analysis for the Skilled Occupations List (SOL) was conducted using the latest available data, including the 2010 ABS Survey of Education and Work (SEW). Percentages may therefore differ from those cited in the 'Occupation Trends' analysis (over the page), which uses alternative sources in some instances (e.g. the 2008 ABS Survey of Education and Work). Small sample sizes for some occupations may also result in fluctuations in the SEW data between 2008 and 2010. The specific data sources used for the Occupation Trends analysis can be found on the Skills Australia website: <http://www.skillsaustralia.gov.au/SOLsummarysheets.shtml>.

Program. Industrial, Mechanical and Production Engineers are also important to meet skills needs across a range of industries including Mining, Construction and Manufacturing.

Occupation trends

ANZSCO: 2335

Industrial, Mechanical and Production Engineers

Employment level	28,000 Almost all workers are employed full-time (92.3%).
6 digit employment (2006 Census)	233511 Industrial Engineer 3019 233512 Mechanical Engineer 8751 233513 Production or Plant Engineer 2811
Employment growth	Over the five years to August 2010, employment decreased by 9.2% (compared with growth of 12.1% for all occupations). Employment is expected to decline by 1.5% over the next five years (compared with projected growth of 9.5% for all occupations).
Unemployment rate	Slightly below average (around 2.9%) compared with all occupations.
Educational profile	Around 68.3% have a Bachelor degree or higher qualification.
Vacancies	The Internet Vacancy Index (IVI) rose by 77.1% (from a low base) over the 12 months to September 2010 to 93.7 (March 2006=100). Vacancies for all occupations increased by 19.4%.
Gender	Around 4.0% of workers are female (compared with 45.4% for all occupations).
Labour turnover	Around 5.3% of workers leave this occupation in a year compared with 13.1% for all occupations.
Age profile	The median age is 37.2 years and 33.1% are aged 45 years and over (compared with 38.5% for all occupations).
Earnings	Median full-time weekly earnings (before tax) are high (\$1610).
Graduate outcomes	Graduate Careers Australia data show 99% of Bachelor degree graduates in mechanical engineering seeking full-time work were working four months after graduation, 77% of whom were employed as Engineering Professionals.
Skill shortages	National shortages of Mechanical Engineers were identified through DEEWR research in 2006, 2007, 2008 and 2010. Shortages of Production or Plant Engineers were also identified in 2008.

Labour market

233511 Industrial Engineer: Not assessed

233512 Mechanical Engineer: There was strong demand between 2006 and 2008 and shortages were relatively widespread over that period. In 2009 the labour market eased significantly and shortages abated. DEEWR research in 2010 shows the labour market is again tightening and shortages have re-emerged. Employers filled less than 40% of Mechanical Engineer vacancies and attracted fewer than two suitable applicants per vacancy.

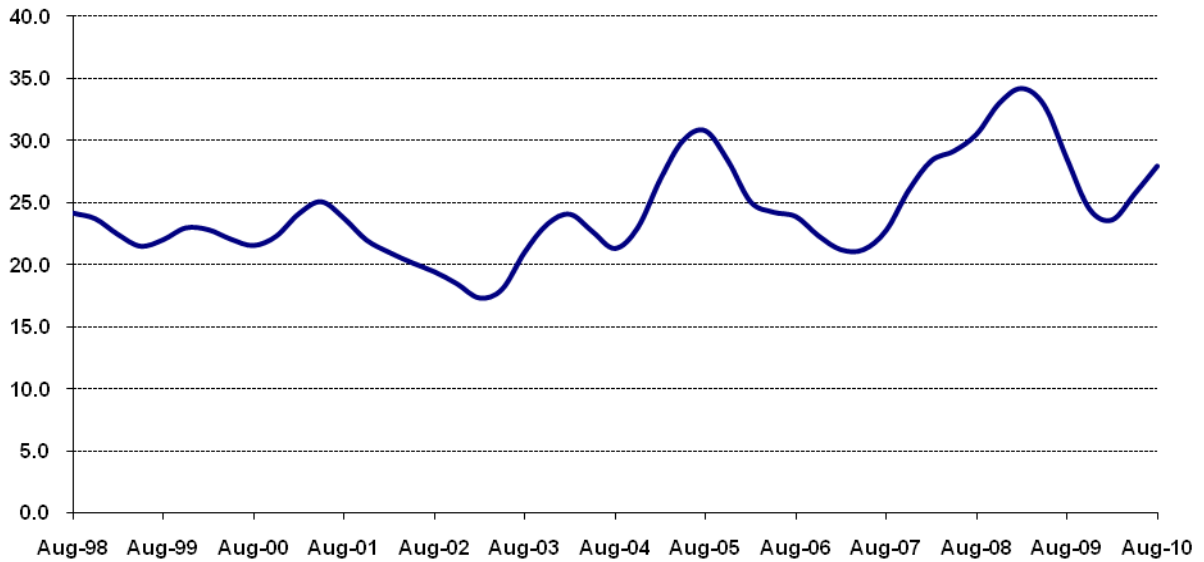
Shortages are most evident for specialist and senior positions requiring a minimum of five years experience. The largest employing industry is Manufacturing (which accounts for 40% to 50% of mechanical engineering employment).

233513 Production or Plant Engineer: This has been a difficult occupation to research with few advertised vacancies identified. Employers recruiting in this occupation often require very specific skills, for example experience in a particular area of production or a specific brand of plant or equipment.

Summary

Employment has declined over the past five years and further contraction is projected for the next five years. Shortages of Mechanical Engineers have, however, re-emerged in 2010 after lower levels of demand and significantly easier recruitment in 2009. There has been some recovery in the level of advertised vacancies since late 2009. Unemployment is slightly below average.

Industrial, Mechanical and Production Engineers
Employed Persons ('000s) Aug 1998 to Aug 2010



Industrial, Mechanical and Production Engineers
Employed Persons ('000s) Aug 1998 to Aug 2010

