

**AUSTRALIAN ENGINEERING EDUCATION**  
**STUDENT, GRADUATE AND STAFF DATA AND PERFORMANCE TRENDS**  
**MARCH 2019**

## **1. INTRODUCTION**

This report and appended data tables are an authoritative resource on the current size and performance of engineering education in the Australian higher education (HE) system.

Most of the data are sourced from the Australian Government Department of Education and Training (DET) collections for the defined field of education, 'Engineering and Related Technologies'<sup>1</sup>. This field includes HE programs in 'Engineering' as covered by the engineering profession, and 'Related Technologies' such as qualifications in aviation, marine, and spatial sciences. The latter make up a small proportion of the FoE 03 aggregates. The text includes references to the 'non-engineering' areas where it is appropriate to do so.

The data cover HE programs at Levels 5 to 10 of the Australian Qualifications Framework (AQF). An explanation of how the award levels map to programs that are eligible for external accreditation by Engineers Australia is provided to assist interpretation.

This report provides data for the 2017 academic (calendar) year, and trends for national enrolments and graduations, and the participation of women. Data pertaining to domestic and international students and graduates are provided. The international category includes both on-shore and off-shore numbers. Summary Indigenous student enrolments and completions for all award levels are provided. For Bachelors degrees (including Bachelor Honours degrees), information is provided on student admission profiles, success, retention and graduation (completion) rates, with comparisons for other fields of education.

Performance data, in terms of graduates' employment rates, salaries and satisfaction rates, and employer satisfaction, are provided from the annual national surveys from the DET QILT (Quality Indicators for Learning & Teaching) program. The report includes some comparisons of national means or median ratings for engineering with those of other disciplines. Research performance (such as competitive grants, publications and engagement) is not included.

Some data on non-casual staff for the field is provided. These data and student enrolment and related data are supplied to DET by Australia's public universities and other providers (private institutions and TAFE institutes). For engineering, the 'other providers' contribute a very small number of students and graduates. Data are validated by DET before publication. While providers comply with the DET submission requirements, they do not necessarily report some datasets entirely consistently with each other. Inconsistencies that impact on accuracy and interpretation are noted in the text.

The Australian engineering HE system is diverse: it includes large and small metropolitan and regional universities, and a small number of other providers. The report summarises enrolments, load, graduations, approximate staffing and the range of programs offered for each of the 36 ACED members.

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<sup>1</sup> The Australian Standard Classification of Education (ASCED) defines 11 Fields of Education, plus 'Mixed-Field' programs. Engineering and Related Technologies is FoE 03. See Appendix Table 19 for the list of subfields. See <http://www.abs.gov.au/ausstats/abs@.nsf/0/53B75DFA4C63C20ACA256AAF001FCA6F?opendocument>

## KEY FACTS FOR ENGINEERING & RELATED TECHNOLOGIES - 2017

### SYSTEM SIZE

**Total enrolment: 115,420 students** (111,605 at the 36 ACED member institutions)

**Student load: 75,865 EFTS** (effective full-time students) at the ACED institutions

**Academic staff: ~ 4,200 FTE** (excl'g casuals) in teaching and research positions at ACED institutions.

### GRADUATES

award	domestic (% women)	international (% women)
<b>Bachelors degrees</b>	7,742 (14.9%)	4,301 (20.3%)
<b>Postgraduate coursework</b>	2,135 (21.1%)	4,894 (17.3%)
<b>Research (PhD and Masters)</b>	742 (24.5%)	901 (26.8%)
<b>Other undergraduate awards</b>	784 (9.0%)	1,264 (13.1%)

Approximate distributions amongst major branches of engineering for graduates of Bachelors Degrees (including Honours) and Associate Degrees and Advanced Diplomas:

branch of engineering	domestic (% women)	international (% women)
<b>aerospace (inc. civil aviation)</b>	11% (15%)	9% (27%)
<b>civil engineering</b>	30% (12%)	25% (18%)
<b>electrical &amp; electronics</b>	18% (9%)	25% (16%)
<b>mechanical &amp; manufacturing</b>	21% (8%)	25% (9%)
<b>process &amp; resources (chemical &amp; mining)</b>	14% (28%)	11% (40%)
<b>other</b>	6% (nd)	5% (nd)

**For holders of undergraduate awards, 6 months after graduation:**

measure surveyed	engineering	all fields
<b>median salary</b>	<b>\$65,000</b>	\$61,500
<b>in full-time employment</b>	<b>83.1%</b>	72.9%
<b>graduate overall satisfaction</b>	<b>74.9%</b>	79.7%
<b>employer overall satisfaction</b>	<b>86.9%</b>	84.8%

More than 75% of the graduates of a Bachelors degree in Engineering are likely to have commenced higher education study in the same institution, up to 6 years earlier.

### COMMENCEMENTS

award	domestic (% women)	international (% women)
<b>Bachelors degrees</b>	13,736 (16.9%)	7,842 (20.3%)
<b>Postgraduate coursework</b>	2,525 (17.8%)	8,279 (20.1%)
<b>Research (PhD and Masters)</b>	888 (25.2%)	1,632 (27.3%)
<b>Other undergraduate awards</b>	1,662 (12.3%)	1,917 (13.4%)

Engineering enrolled 5.2% of all domestic commencing students commencing Bachelors Degrees. This proportion has declined steadily since being 6.0% in 2013.

62% of the domestic students commencing Bachelors degrees in Engineering entered from school on the basis of ATAR. **70% of this group had ATAR greater than 80.00.** (For 'all fields' the equivalent percentages are 40% and 48.1%, respectively.) Engineering is consistently the field of education with the strongest ATAR profile, and the highest rate of school-leaver entry.

More than 75% of domestic students who commence a Bachelors degree in Engineering are likely to complete a degree, in Engineering or another field.

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## 2. AWARD LEVELS AND EXTERNAL ACCREDITATION BY ENGINEERS AUSTRALIA

Higher education providers offer award programs from Level 5 (Diploma) to Level 10 (Doctorate) of the Australian Qualifications Framework (AQF). Australian education providers must align their programs with the level specifications and descriptors of AQF. Providers of engineering programs also align their programs to the needs of the engineering profession.

Engineers Australia (EA) accredits programs that deliver qualifications for entry to supervised practice in three occupations: professional engineers, engineering technologists and engineering associates (senior technicians), as listed in the following table.

Occupation and EA membership category	Award (minimum full-time equivalent academic years of study, post-secondary school)	AQF Level	International Accord
Professional Engineer	Master (coursework) (5 years) Bachelor Honours (4 years)	9 8	Washington
Engineering Technologist	Bachelor (3 years)	7	Sydney
Engineering Associate	Associate Degree (2 years) Advanced Diploma (2 years)	6	Dublin

EA specifies the accreditation standards as a set of graduate ‘competencies’ for each occupation. These standards are benchmarked against those of the educational accords of the International Engineering Alliance (IEA)<sup>2</sup>. The EA accreditation process evaluates programs – specifically their delivery of the graduate competencies – against criteria covering the academic program design and implementation, the provider’s operating environment and quality assurance processes. Accreditation covers programs for up to five years from the year of evaluation.

Graduates of EA accredited programs are deemed to have met the required standards for graduate membership of the corresponding occupational category within EA. Their qualification is also recognised as equivalent (in terms of outcomes) to those of the other signatories of the relevant accord.

Three matters that impact on data interpretation require further explanation:

- (i) Since 1980, EA has required the accredited professional engineer qualification to be of at least four full-time study years’ duration (or part-time equivalent) post secondary school. From 1980 to 2013, the majority of graduates at many universities were awarded their 4-year degree ‘with Honours’, based on merit. Since 2014 providers been required (in order to comply with the Australian HE Standards) to configure their four-year degrees as ‘Bachelor Honours Degrees’ as defined in AQF Level 8. **Thus, the BEng(Hons) is now the ‘standard’ degree for entry to professional engineering practice in Australia.** Nevertheless, the data provided in this report aggregates ‘bachelor degree’ numbers to cover awards at AQF Levels 7 and 8. Table 18 lists ACED members’ provision of programs at these two levels.
- (ii) Until the mid-2000’s, coursework Master degrees (AQF Level 9) in engineering were offered primarily to qualified professional engineers to advance their engineering and technical knowledge. These degrees were not accredited by EA. Since the 2000’s, more than half of the Australian university providers and some private providers have developed ‘entry-to-practice’ Master degrees that are aimed at domestic<sup>3</sup> and international bachelors graduates of suitable engineering science degrees and others. These programs are accredited by EA to the Professional Engineer standard.

<sup>2</sup> The IEA is a self-governed international organisation of bodies that each has their nation’s responsibility for accreditation of engineering qualifications and standards of engineering practice. As at January 2019 the Washington Accord has 20 full signatories. The Sydney and Dublin Accords have 11 and 9 full signatories, respectively. See <http://www.ieagrements.org/>

<sup>3</sup> Notably, the University of Melbourne and The University of Western Australia have ceased offering 4-year bachelors degrees, and have adopted a ‘3yr BSc +2yr MEng’ engineering qualification model.

The aggregated data for Master (coursework) graduates presented here includes numbers for both types of Masters programs. Table 18 summarises the current provision of Master degree programs by ACED members.

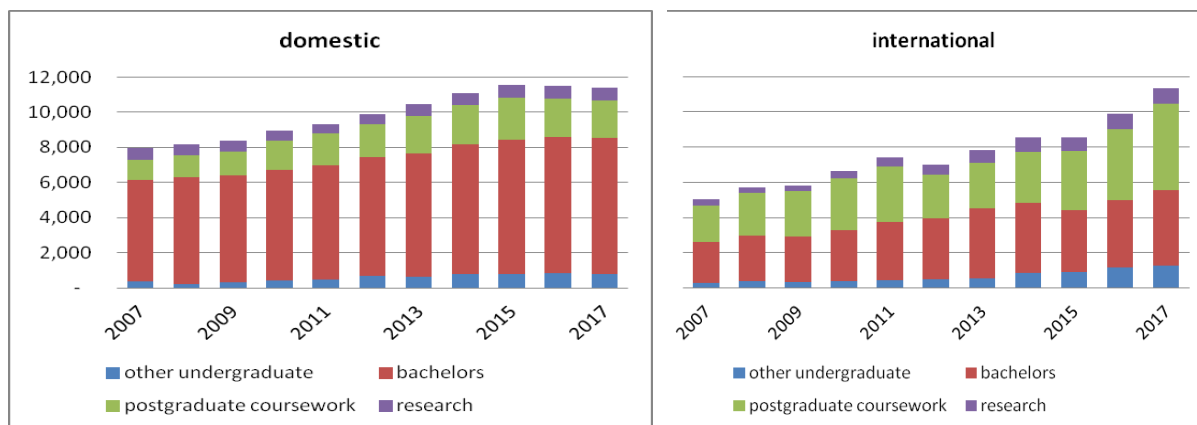
- (iii) Research degrees (Doctorates and Masters at AQF Levels 10 and 9, respectively) are not considered by EA for external accreditation. However, some data presented here is aggregated across all Masters degrees.

These overlaps in award designations and alternative primary objectives thus make it impossible to use these national aggregations to provide exact answers to questions like: '*How many domestic students were awarded an accredited Professional Engineering qualification in a given year?*' or '*How many domestic engineering professionals are taking an advanced Masters degree?*' The report does, however, provide estimates and comments on such points.

### 3. GRADUATIONS

#### 3.1 Graduations by award level

The total numbers of graduates by award level over 2007-17 are provided in Table 1 of the Appendix. Figure 1 summarises these graduation numbers since 2007 in four broad qualification levels: research, postgraduate coursework, bachelors and other undergraduate awards (Associate Degrees, Advanced Diplomas and Diplomas).



**Figure 1 Domestic and international student graduations, 2007-17**

#### 3.2 Graduations: key points and trends

(i) PhDs and Research Masters (domestic: 742; international 901)

- Graduations from research degrees have almost doubled over the decade, predominantly from the threefold increase in international PhD graduates, who have constituted the majority of research graduates since 2013.
- Graduations by women have increased, to approximately 25% of the total, since 2013.
- Research graduates in Engineering are 15% of the national research graduate total across all areas of education, but are less than 10% of the domestic total.

(ii) Postgraduate coursework (domestic: 2,135; international:4,894)

- Graduations (domestic and international) from Masters degrees continued to increase, dominated by the 23% increase of international students from 2016. Most of this growth is attributed to graduations from accredited entry-to-practice degrees.
- Graduations by women (domestic and international) in coursework Masters are consistently a few percent higher than for bachelors degrees.
- Graduate Certificates and Graduate Diplomas continue to be dominated by domestic graduates, but have dropped in total by 30% since 2015. These awards are most likely to be exit points from advanced Masters programs taken by practicing professionals.

(iii) Bachelor degrees (domestic: 7,742; international: 4,301)

- The domestic graduations in 2017 were one less than the 2016 peak; with continued increase in international numbers, the total of 12,043 was the highest on record.
- These totals include approximately 878 graduates from 3-year degrees (see Table 2), many of whom are studying civil aviation degrees. Many of the engineering graduates at this level will subsequently articulate to professional engineering degrees.
- Graduations by women constituted 14.9% and 20.3% of the domestic and international totals, respectively. The latter is the highest figure on record and may be boosted by increased numbers of women in off-shore programs.

(iv) Other undergraduate (domestic: 784; international: 1,264)

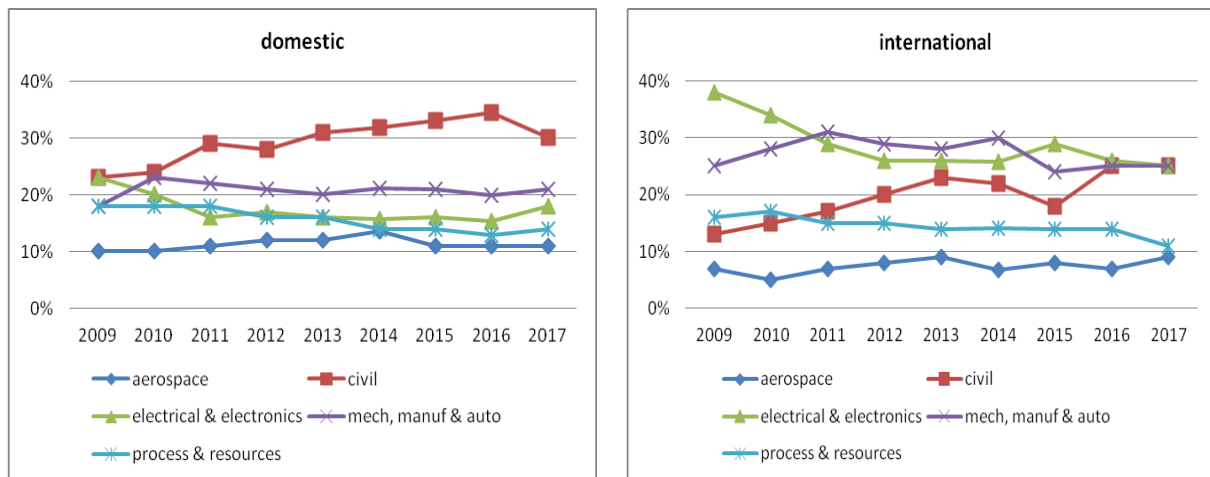
- Associate Degrees and Advanced Diplomas were awarded to more than 600 students for the sixth consecutive year. Consistently, 80% of this total are domestic graduates. Many of the engineering graduates at this level use this qualification to articulate into professional engineering degrees.
- In contrast, 80% of the graduates of engineering diplomas and enabling programs are international. Many of these graduates will articulate to enrolments in bachelor degrees as discussed in Section 5. As reported in previous years, there may be more students on enabling (foundation) pathways, but not assigned to the engineering field of education.

(v) Professional Engineering qualifications

- From these data and other information, it is estimated that about 8,000 and 5,400 domestic and international students respectively, graduated from a BEng(Hons) or entry-to-practice Master degree in 2017.

### 3.3 Undergraduate completions by branch of engineering

Appendix Table 2 provides details of undergraduate graduations, by duration and 4-digit code sub-classification of Engineering & Related Technologies. These data provide some insight into the relative attractiveness of the main branches offered to domestic and international students. Figure 2 presents indicative trends<sup>4</sup> for graduates aggregated across 2-year and longer undergraduate awards.



**Figure 2 Indicative distributions of undergraduate awards by branch of engineering, 2009-17**

Key points include:

- for domestic students, the steady increase in civil engineering graduations turned down in 2017, but there were small increases in electrical/electronic engineering, the mechanical and manufacturing areas, and 'process and resources'<sup>5</sup> engineering;
- for international students, civil, mechanical and electrical/ electronics engineering graduations each have about 25% of the cohort. The latter two areas dominate offerings at offshore campuses.

With more universities and other providers offering accredited entry-to-practice masters degrees, further data collection and analysis are needed to determine the real trends in graduations by engineering branch, for both domestic and international cohorts.

<sup>4</sup> These data are not definitive because several universities report their graduations against two generic ASCED codes (0300 and 0399). The trends shown assume that the universities that do report against the 4-digit codes are representative of the system as a whole. See Appendix Table 2 and Table 19.

<sup>5</sup> This combination is principally Chemical Engineering and Mining Engineering.

## 4. TOTAL ENROLMENTS AND STUDENT LOAD

### 4.1 Total enrolments

The data by detailed award level are provided in Appendix Table 3, and summarised in Figure 3 for the broad award level categories. Naturally, total enrolments are the cumulative result of students commencements (Section 5) and successful progression and retention in their programs (Section 6).

The overall growth to more than 115,000 students in 2017 is entirely from international enrolments (12.5% increase from 2016), with 25% increase in enrolments in coursework Master degrees (mostly entry-to-practice programs), 8% increase in Bachelor degrees and 6% increase in PhDs.

Total domestic enrolments in 2017 declined by 0.5% from 2016.

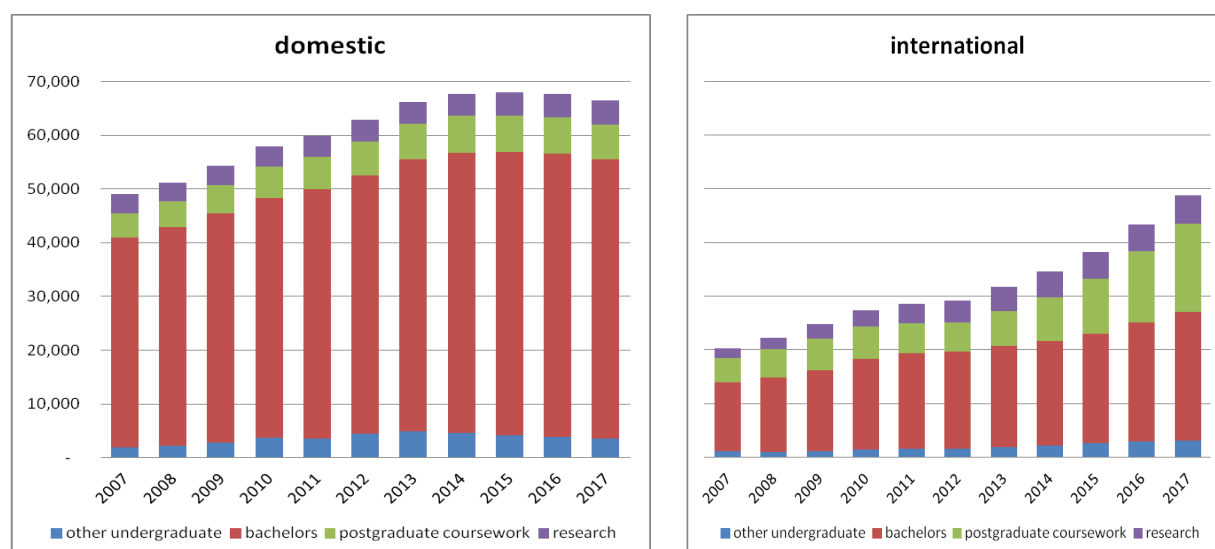


Figure 3 Domestic and international student enrolments, 2007-17

### 4.2 Student load

Funding for teaching and research training is normally based on 'taught student load'. The unit of measurement is one 'effective full-time student (EFT)' in the identified field of education. The following table summarises the load for the Engineering & Related Technologies field over the last three years. Earlier year data is provided in Appendix Table 4.

year	doctorate	master	other p/g	bachelor	other u/g	enabling	non-award	total
domestic 2015	2,588	3,114	629	35,134	1,521	46	58	43,087
domestic 2016	2,695	3,249	546	34,783	1,455	7	51	42,787
<b>domestic 2017</b>	<b>2,721</b>	<b>3,164</b>	<b>469</b>	<b>33,730</b>	<b>1,437</b>	<b>5</b>	<b>61</b>	<b>41,587</b>
% change v 2016	1.0%	-2.6%	-14.1%	-3.0%	-1.2%	-28.6%	19.6%	-2.8%
year	doctorate	master	other p/g	bachelors	other u/g	enabling	non-award	total
total 2015	6,207	10,931	749	49,765	2,529	46	975	71,201
total 2016	6,440	13,264	662	50,828	2,600	7	723	74,525
<b>total 2017</b>	<b>6,661</b>	<b>15,714</b>	<b>594</b>	<b>51,272</b>	<b>2,659</b>	<b>5</b>	<b>378</b>	<b>77,284</b>
% change v 2016	3.4%	18.5%	-10.3%	0.9%	2.3%	-28.6%	-47.7%	3.7%

Note that the student load taken by non-university providers in 2017 was 1,295 EFTS, less than 2% of the total.

The international student load can be calculated as the difference between the total and domestic load, for each corresponding cell. In line with total enrolments, the balance is shifting towards international load.



Overall load increased by 3.7% from the previous year, largely due to the growth in international students in Masters (coursework) degrees. As discussed later, this growth is principally in EA accredited entry-to-practice Masters degrees. The distribution of load between the branches of engineering for 2017 is provided in Appendix Table 4.

Assuming all the 2017 load is attributed to teaching engineering students, the 77,284 EFTS load is generated by the 115,420 enrolled students. On average, and as for 2016, each engineering student represents approximately 0.67 EFT of engineering load. The difference between this number and parity is due to part-time enrolment and the contribution of teaching load from other academic areas into engineering programs. The majority of the latter is 'service teaching' of mathematics, science and computing into the first two years of undergraduate engineering.

In Section 7, the load data are combined with staff data to estimate the overall student-staff ratio for engineering teaching and research training, undertaken by ACED members.

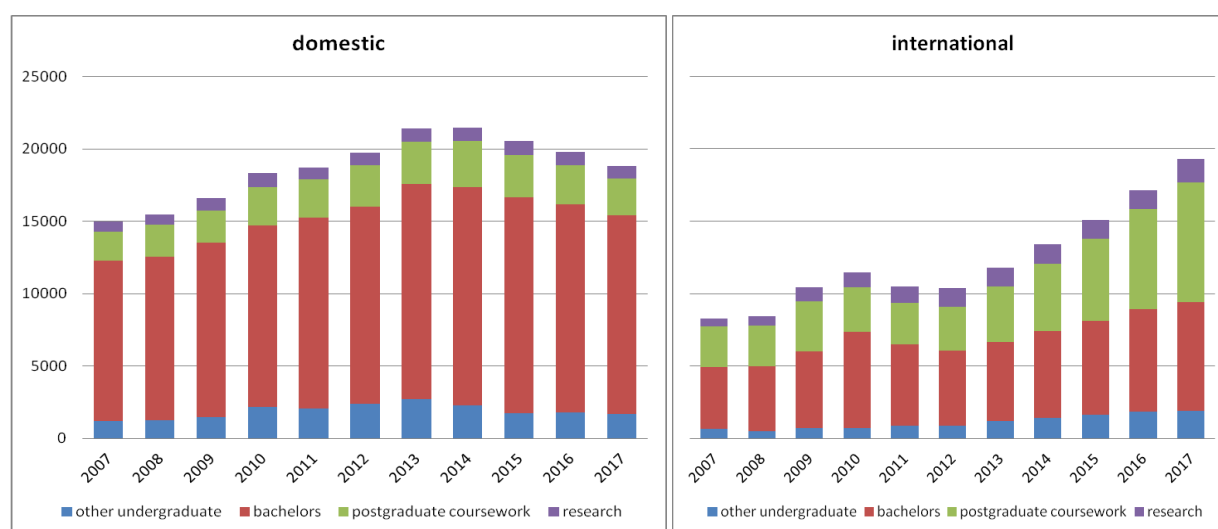
## 5. COMMENCING ENROLMENTS

### 5.1 Aggregates, by qualification level

Future graduations are preceded by commencing enrolments. Appendix Table 5 provides the details of commencing student numbers by detailed award level. Figure 4 shows the trends for the broad award levels, over the past decade.

Clearly, international commencement growth is underpinning the overall growth. For the first time, in 2017 the majority (50.7%) of commencing enrolments were by international students, an increasing proportion of whom are studying offshore.

Dominating this growth are international enrolments in coursework Masters degrees (up 20% from 2016), mostly in accredited entry-to-practice programs.



**Figure 4 Domestic and international student commencing enrolments, 2007-17**

#### Further comments on 2017 data and trends:

(i) *PhDs and Research Masters (domestic: 888; international: 1,632)*

- Two thirds of PhD commencements in 2017 were from international students. The 2017 international figure increased by 26% from 2016 to 1,428, having been around 1,150 for four years. Domestic PhD commencements increased slightly in 2017, to 712.
- Research Masters commencements in 2017 were similar to previous years, at 380, but show a 25% decline since 2010, primarily in the domestic component.

(ii) *Postgraduate coursework (domestic: 2,525; international: 8,279)*

- Total commencements into coursework Masters degrees grew by 14.2% from 2016. There was a 19.8% increase from 2016 (79% increase since 2014) in international enrolments, primarily in entry-to-practice Master degrees.
- Domestic commencements into coursework Masters fell to 1,931, the lowest value since 2014. This indicates further decline in the take-up of advanced coursework masters degrees aimed at practicing engineers. This trend is reinforced by the steady decline in commencement in Graduate Diplomas and Certificates since 2010, by both domestic and international students.

(iii) *Bachelor degrees (domestic: 13,726; international: 7,842)*

- Total commencing enrolments were slightly lower than the 2016 figure, and for the third successive year, domestic enrolments fell, by about 4.5% from 2016.
- The 5.5% increase in international commencing enrolments was about half of the increase of the three previous years. This is probably a result of increased local provision of

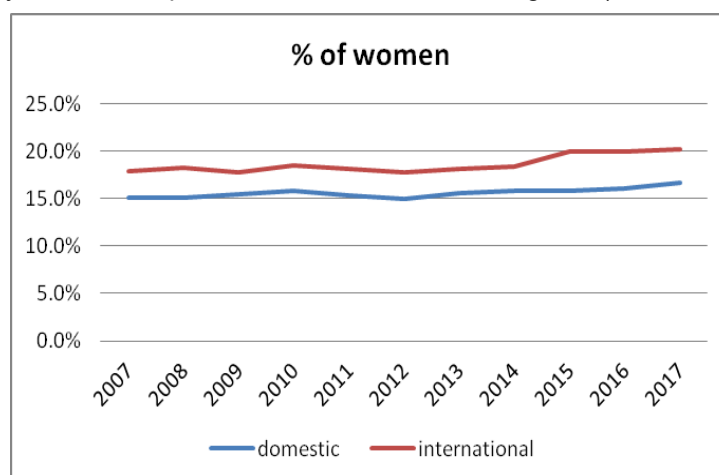
bachelors degrees in countries from which Australia previously drew enrolments (and that are now Washington Accord signatories), and preference by international graduates for the 2-year entry-to-practice coursework masters degree pathway to a professional engineering qualification.

(iv) Other undergraduate (domestic: 1,662; international: 1,917)

- Commencing enrolments in Associate Degrees and Advanced Diplomas by domestic students continued to decline, from 1,890 in 2013 to 1,031 in 2017, alongside a slight increase (to 244) in international commencements.
- Commencing enrolments into Enabling courses and Diplomas in 2017 were very similar to those 2016, after some previous growth. These programs are clearly providing pathways into engineering degrees (see section 4.3).

(v) Participation of women

- Research degrees in engineering have had consistently higher rates of participation by women than other categories of engineering qualification. In 2017, women were 25.4% and 27.5% of the domestic and international commencing PhD enrolments, respectively. The corresponding figures for Research Master degrees were 24.4% and 26.0%.
- Domestic and international commencements by women constituted 17.3% and 20.2%, respectively, of the coursework Masters cohorts, similar figures to the previous three years.
- Domestic commencements by women constituted 16.9% of the Bachelor degree cohort in 2017, the highest ever figure. At 20.2%, the international participation rate was similar to the previous two years, and higher than any year prior to 2015.
- Commencing enrolments by women into other undergraduate awards (with relatively small enrolments) tend to be at lower rates than those for Bachelor degrees.
- Overall, in 2017 the proportions of women commencing any award program in engineering were the highest on record: 16.7% and 20.2% for domestic and international cohorts, respectively. The slow upward trends are shown in Figure 5).



**Figure 5 Proportions of women commencing award programs in engineering, 2007-17**

## 5.2 Domestic commencements across all fields of education

Figure 6 (data in Appendix Table 6) records the numbers of domestic students commencing HE awards in several fields of education, for all award levels. The grand total (410,167) in 2017 was the highest for any year on record.

In 2017, and for the third successive year, the number and proportion of commencing domestic enrolments in Engineering & Related Technologies dropped, the latter figure to 4.6% of the total national across all fields. This is the lowest proportion on record, and continues the decline since

2013. In contrast, commencing domestic enrolments in Natural & Physical Sciences (8.8%) was the same as 2016, while Information Technology (3.5%) increased significantly from its 2016 figure.

Within this declining trend for Engineering, the proportion of domestic Bachelor degree commencements in Engineering amongst all fields of education dropped to 4.9%, from 5.3% in 2016, down from the peak of 6.1% in 2013 (see Appendix Table 7). The impact of this decline on potential graduations into professional engineering (via BEng(Hons) and entry-to-practice MEng programs) is partly offset by the BSc commencements at the two universities no longer enrolling students directly into engineering bachelors' degrees.

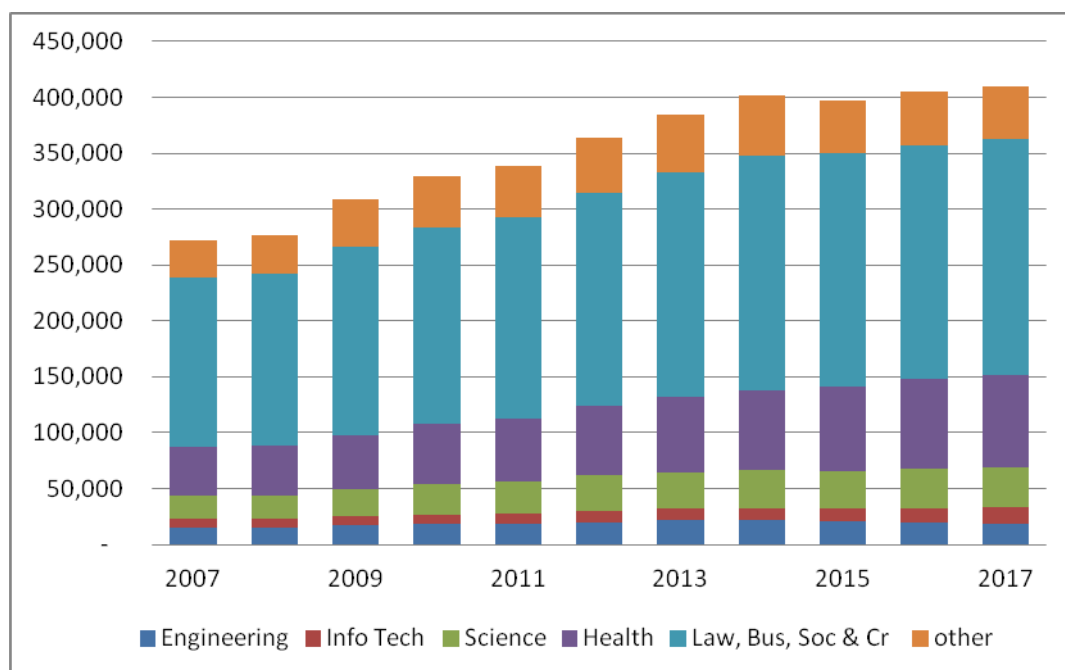


Figure 6 Domestic commencing enrolments (all awards) in selected fields, 2007-17

### 5.3 Basis of admission into Bachelor degrees including ATAR profiles

Non-school-leaver entry into Engineering has tended to become more common for both domestic and international student categories, as the total number of commencing Bachelor degrees students in engineering has increased. The trends are summarised (from the data in Appendix Table 8) as:

basis of admission	Domestic			International		
	2012	2016	2017	2012	2016	2017
secondary school	65.0%	57.9%	61.6%	26.2%	29.1%	29.4%
VET/TAFE	6.6%	7.3%	6.5%	7.4%	6.4%	7.8%
higher education	19.2%	23.1%	21.7%	26.7%	34.7%	36.0%
other	9.2%	11.7%	10.2%	39.8%	29.9%	26.8%

For *domestic students*, in 2017, about 38.4% of commencing students were admitted to engineering Bachelor degrees by a non-secondary school route. The proportion gaining admission on the basis of a completed or partially completed higher education award has increased from 13% to more than 23% (in 2015), dropping to 21.7% in 2017. This quantifies the increased use of articulation pathways within higher education. The proportion admitted on the basis of a TAFE or VET qualification has been fairly steady, at around 7% since 2004.

The proportion admitted on the basis of secondary schooling (and their ATAR rank) has decreased from more than 70% (in 2006) to less than 58% during 2014-16, but reversed to 61.6% in 2017.

The national Undergraduate Admissions, Offers and Acceptances report for 2017 recorded that applicants to Engineering constituted 5.7% of the total Year 12 applicant sub-cohort. Comparative figures for the shares of offers by ATAR band of the applicant student cohorts for several fields of education in 2017 are provided in the following table:

field of education	< 50	50.05 – 60.00	60.05 – 70.00	70.05 – 80.00	80.05 – 90.00	> 90.05	Number of ATAR offers	% of ATAR offers
Natural & Physical Sciences	3.6%	5.1%	11.2%	19.7%	28.2%	32.1%	16,609	53.0%
Information Technology	9.5%	14.7%	23.8%	23.0%	17.4%	11.5%	3,508	40.2%
Engineering	2.0%	3.4%	8.5%	15.0%	30.1%	41.1%	9,619	57.8%
Health	5.8%	9.4%	17.4%	21.4%	22.3%	23.7%	20,106	30.9%
Management & Commerce	6.6%	10.4%	16.8%	17.9%	22.9%	25.4%	17,985	46.4%
All fields	6.3%	9.1%	16.4%	20.0%	23.5%	24.6%	114482	40.0%

Of all fields (including those not reported in this table) Engineering had both the strongest 'ATAR profile' (i.e. the field of education<sup>6</sup>, with the highest proportions of offers to candidates with ATAR greater than 90.00 and 80.00, and the lowest proportion to those with ATAR less than 60.05) and the highest proportion of offers on the basis of ATAR. This ATAR profile for Engineering was slightly higher than the corresponding figures for 2016. The high ATAR profile is probably a result of students taking the higher levels of mathematics that are scaled up in ATAR rank calculations.

For *international students*, the admission patterns into bachelors degrees have fluctuated over the past decade (while numbers have increased by 74%), with about 30% coming from secondary school, about 7% from TAFE or VET, and an increasing trend (to 36% in 2017) in those admitted from a completed or partially completed higher education award.

#### 5.4 Countries of origin of commencing on-shore international students

The international student and graduate data aggregates presented in this report include students in engineering qualifications provided overseas at campuses operated by Australian education providers, or in partnership with local off-shore providers.

The 11 countries providing the most on-shore commencing students into Engineering & Related Technologies are listed in rank order for 2017, in the table on the next page. (More details are in Appendix Table 9.)

Over the past five years, China has consistently been the leading source country by a large margin, followed by India. In 2017, these two countries accounted for 57% of on-shore commencing enrolments.

Over the last five years, there have been changes in the relative proportions coming from other countries. Noteworthy are the rises of Pakistan, Sri Lanka and Nepal in the proportion and/or rankings, and falls for both Saudi Arabia and Indonesia.

Within each total, the distributions of on-shore commencing enrolments into undergraduate and postgraduate degrees differ from the overall rankings, although China dominates all categories. Appendix Table 9 provides data for 2016 and 2017, extended to the top 16 countries of origin. These data show:

- (i) for all postgraduate awards (research and coursework), Nepal (3.4%) and Iran (2.4%), were ranked 4<sup>th</sup> and 5<sup>th</sup> in 2017, higher than their overall rankings;.

<sup>6</sup> The sub-fields of Medical Studies, Dental Studies and Veterinary Studies within Health have stronger ATAR profiles, but much smaller enrolments than Engineering.

(ii) for Bachelor degrees, Malaysia (7.5%) was at 2<sup>nd</sup> place, with India (6.8%) at 3<sup>rd</sup> place. Sri Lanka (5.5%) and Viet Nam (4.6%) were 4<sup>th</sup> and 5<sup>th</sup> respectively, in front of Pakistan (3.7%).

Country of origin	2017		2016		2015		2014		2013	
	number	%	%	rank	%	rank	%	rank	%	rank
China (excl SARs, and Taiwan)	5785	40.6	42.0	1	39.1	1	35.1	1	34.1	1
India	2628	16.4	16.4	2	15.2	2	15.5	2	12.7	2
Pakistan	721	4.6	4.3	4	4.2	4	3.5	4	2.9	6=
Malaysia	468	4.3	4.6	3	5.4	3	6.1	3	7.5	3
Viet Nam	427	2.9	2.7	6	3.2	5	2.9	5=	2.8	8=
Sri Lanka	394	2.7	2.9	5	2.6	7	2.1	9=	2.1	11
Nepal	390	2.3	1.8	10	1.2	14	1.9	13=	2.0	12
Bangladesh	328	2.0	2.3	7	2.1	9	2.1	9=	2.2	10
Hong Kong	282	1.9	1.8	11	1.9	10	2.1	9=	1.9	13
Indonesia	276	1.8	1.9	9	2.3	8	2.3	8	2.9	6=
Saudi Arabia	251	1.8	2.0	8	2.8	6	2.9	5=	2.8	8=
<b>Total commencements</b>	<b>14,237<sup>7</sup></b>		<b>14,877</b>		<b>12,988</b>		<b>11,261</b>		<b>9,871</b>	

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Over the last five years, there have been changes in the relative proportions coming from other countries. Noteworthy are the rises of Pakistan, Sri Lanka and Nepal in the proportion and/or rankings, and falls for both Saudi Arabia and Indonesia.

Within each total, the distributions of on-shore commencing enrolments into undergraduate and postgraduate degrees differ from the overall rankings, although China dominates all categories. Appendix Table 9 provides data for 2016 and 2017, extended to the top 16 countries of origin. These data show:

- (iii) for all postgraduate awards (research and coursework), Nepal (3.4%) and Iran (2.4%), were ranked 4<sup>th</sup> and 5<sup>th</sup> in 2017, higher than their overall rankings;
- (iv) for Bachelors degrees, Malaysia (7.5%) was at 2<sup>nd</sup> place, with India (6.8%) at 3<sup>rd</sup> place. Sri Lanka (5.5%) and Viet Nam (4.6%) were 4<sup>th</sup> and 5<sup>th</sup> respectively, in front of Pakistan (3.7%).

<sup>7</sup> These data indicate that the number of onshore Engineering enrolments in 2017 dropped slightly from the 2016 figure, although the total number of international commencing students increased by about 2,000. The implication is that in 2017, some 5,473 were studying offshore, an apparent increase of about 2,000 from previous years. Prior to 2016, the Department of Education & Training recorded as onshore, students located offshore but studying by distance (on-line) education. This definitional change may not account for the whole of the difference noted here, as (to the author's knowledge) none of the off-shore programs operated by ACED members were provided in on-line mode. This apparent anomaly will be clarified.

## 6. COMMENCEMENTS AND COMPLETIONS BY INDIGENOUS STUDENTS

The numbers of Indigenous students in Engineering & Related Technologies reported in the DET data are small, and are very small proportions of the totals. The following table shows the national figures for commencements and completions in broad award categories over 2011-17.

	P/G by Res'ch	P/G C'rsewk	Bachelor (inc Hons)	Other	Total		
	Persons	Persons	Persons	Persons	Male	Female	Persons
<b>Commencements</b>							
2011	< 5	13	66	24	87	17	104
2012	< 5	8	60	30	87	13	100
2013	< 5	10	110	21	128	16	144
2014	< 5	14	115	25	136	20	156
2015	< 5	12	108	23	124	21	145
2016	12		102	20	115	19	134
<b>2017</b>	<b>21</b>		<b>143</b>	<b>&lt; 19</b>	<b>146</b>	<b>36</b>	<b>182</b>
<b>Completions</b>							
2011	0	< 5	22	< 5	np	< 5	28
2012	0	< 5	23	< 5	26	5	31
2013	< 5	< 5	25	6	np	< 5	35
2014	0	8	37	7	45	7	52
2015	< 5	11	34	< 5	43	6	49
2016	7		38	10	51	4	55
<b>2017</b>	<b>8</b>		<b>34</b>	<b>&lt; 10</b>	<b>45</b>	<b>5</b>	<b>50</b>

While commencing Indigenous student numbers in Bachelor degrees have more than doubled since 2011, they remain in 2017, considerably less than 1% of the total.

Completion numbers indicate relatively high attrition, and completion rates around 40%. The 2017 graduates from Bachelor degrees would have commenced study during 2011-14. Further data in Appendix Table 10 breaks down the later data by State and Territory. Queensland has consistently enrolled and graduated the largest numbers of Indigenous students, followed by New South Wales.

## 7. BACHELORS DEGREES: PROGRESSION AND GRADUATION RATES

### 7.1 Annual success rates

The **success rate** is defined as the aggregated proportion of courses (units of study) passed by a cohort of enrolled students in a given year. The summary table (from Appendix Table 11) shows the aggregated success rates in 2017 in comparison with immediate previous years, and a baseline of 2001. Data are provided for commencing students (these include students with advanced standing but not the first program year) and for all students, including those in their commencing year.

Success rates	Domestic				International			
	male		female		male		female	
	full-time	part-time	full-time	part-time	full-time	part-time	full-time	part-time
For <u>commencing students</u>								
2001	82.1	63.7	86.6	65.4	83.6	70.4	88.5	77.2*
2015	83.9	69.9	87.8	76.7	83.4	75.2	89.4	81.7
2016	84.4	68.3	87.1	71.2	83.8	80.4	90.5	77.7
<b>2017</b>	<b>84.2</b>	<b>68.0</b>	<b>87.9</b>	<b>71.7</b>	<b>83.4</b>	<b>76.5</b>	<b>89.8</b>	<b>78.8</b>
For <u>all students</u> (mostly over 3 or more years of study)								
2001	85.5	72.0	89.5	77.8	85.7	76.6	89.1	80.6
2015	87.2	75.1	90.4	78.7	86.2	76.9	91.2	82.9
2016	86.9	73.8	89.2	75.7	86.1	78.8	90.9	74.6
<b>2017</b>	<b>87.4</b>	<b>73.7</b>	<b>90.2</b>	<b>77.3</b>	<b>86.9</b>	<b>76.2</b>	<b>91.7</b>	<b>77.0</b>

Aggregated student success rates do not change much from year to year, but an increasing trend in success is evident over time for all of the student categories shown. In addition:

- part-time students' success rates are consistently lower than those of full-time students;
- women perform consistently better than their male peers;
- international students have higher success rates than domestic students;
- the 'all student' rates are a few per cent higher than those of commencing students, demonstrating that once students are firmly in their program, they will tend to succeed.

### 7.2 Annual retention and attrition rates

**Retention rates** record progression to a subsequent year of study, or graduation. Previous ACED reports have discussed retention rates in some detail to assist in the estimation of loss (attrition) of students from their degree, and the likelihood of graduation. These reports discussed the differences of year-to-year retention rates with respect to students' citizenship status, gender and type of enrolment that were similar to those of the success rates.

DET have changed their definition of retention rate to quantify the outcome only for commencing students, (i.e. those in their first year of enrolment in a course of study), and introduced an attrition rate, also applied only to commencing students<sup>8</sup>. DET have also defined 'new normal' and 'new adjusted' retention rates. The 'normal' rates apply to progression from the designated year within the institution (using StudentID), while 'adjusted' rates allow for following year transfer to another HE provider, using the StudentID and CHESSN (national) identifiers. The following year enrolment may be in a different program or field of education. Summary data is now available using a visual analytics tool to enable comparisons between the 'normal' and 'adjusted' retention rates, and between fields of education. The table below provides recent average retention rate data for

<sup>8</sup> The definitions for the attrition and retention rates may be found at <https://heimshelp.education.gov.au/resources/glossary/glossaryterm?title=Attrition%20Rate> and <https://heimshelp.education.gov.au/resources/glossary/glossaryterm?title=Retention%20Rate>



Bachelor degree students in Engineering and Related Technologies, compared with All Fields, and the 2005 baseline.

field of education	Domestic		International	
	Normal Rate, %	Adjusted Rate, %	Normal Rate, %	Adjusted Rate, %
<b>2005</b>				
<b>Engineering</b>	84.76	88.84	88.59	88.59
<b>All fields</b>	80.81	85.38	88.13	88.13
<b>2014</b>				
<b>Engineering</b>	86.13	90.02	92.53	92.55
<b>All fields</b>	78.59	84.49	90.76	90.76
<b>2015</b>				
<b>Engineering</b>	85.98	91.94	92.19	92.19
<b>All fields</b>	78.69	84.51	90.10	90.11
<b>2016</b>				
<b>Engineering</b>	85.62	90.48	92.37	92.37
<b>All fields</b>	79.38	85.12	90.41	90.41

The ‘adjusted retention rates’ show that overall, domestic Bachelors degree students in Engineering & Related Technologies enrolled over 2014 – 16, had retention rates of about 90%, compared with about 85% for all fields of education. Comparison with the ‘normal rate’ implies that about 4 – 6% transfer between institutions after their first year of study. The international students have slightly higher retention rates, but extremely low transfer rates. The average retention rates have increased slightly over the decade.

There is variation between institutions: retention of domestic students from 2016 into 2017 (for Engineering) was greater than 95% at several metropolitan research universities, but around 70% for some regional institutions.

### 7.3 Completion rates

While the annual success and retention data record aggregated annual progression, also of prime interest is the range of students’ enrolled time and their pathways to completion.

DET now provides a visual analytics tool for 4, 6 and 9-year outcomes by commencement year, field of education and institution and other variables. The following Table shows the aggregated data for domestic students commencing Bachelor degrees in Engineering & Related Technologies, from 2005. The final row of each set is obtained from 2017 graduation data.

Year first enrolled	4 year outcomes, %				6 year outcomes, %				9 year outcomes, %			
	A	B	C	D	A	B	C	D	A	B	C	D
2005	26.2	55.3	10.8	7.7	63.0	18.2	12.4	6.4	74.7	5.4	14.2	5.7
2006	25.5	58.8	9.4	6.3	62.8	18.4	13.1	5.6	75.6	5.3	14.1	5.0
2007	24.9	59.8	9.3	6.0	62.9	18.8	13.1	5.3	75.7	5.2	14.4	4.7
2008	25.7	58.6	10.2	5.5	62.0	18.7	14.5	4.9	74.5	5.1	16.0	4.5
2009	25.8	59.2	9.5	5.4	62.3	19.1	13.8	4.8	75.1	5.0	15.5	4.4
2010	25.0	59.6	9.8	5.6	63.1	18.4	13.5	4.8				
2011	26.5	58.5	10.0	5.0	63.3	18.7	13.6	4.4				
2012	25.5	58.5	10.5	5.6	61.2	19.2	14.5	5.1				
2013	24.7	58.5	10.0	5.0								
2014	24.5	58.6	10.7	6.5								

Key A: award completed; B: still enrolled; C: re-enrolled but dropped out; D: never came back after first year

These average progression and completion patterns are clearly quite stable. They show that:

- after 4 years of study, about 25% of the students will have completed a degree;
- after 9 years of study, 75% will have completed, but 5% are still enrolled;

- about 5% will drop out of higher education after their first year
- about 20% will never complete, with a few percent leaving in their later years of enrolment.

These data are not the 'likelihood of completion' of the original degree in which they were enrolled, because the reported graduation may be in another field of education. The data do include transfers between higher education institutions: More detailed data from DET reported last year, showed that about 9% are likely to make such transfers.

DET does not routinely produce data that tracks engineering graduates back to their original enrolment. Last year's ACED report used additional data from DET to show that changing institutions is likely to increase the overall duration of study by about one year. These data also showed that only about 25% of the 2015 graduates in the national BEng(Hons) degree cohort would have completed in 'minimum time'. There is however, quite wide variation in this proportion between institutions, due to students' study mode (part-time/full-time), enrolment in dual degrees, temporary withdrawal of enrolments, etc.

The key take-home messages from these completion data are that:

- more than 75% of students who commence a bachelors degree in Engineering & Related Technologies are likely to graduate, after nine years form original commencement;
- more than 75% of the graduates who complete a Bachelor degree in Engineering & Related Technologies from the same institution at which they started are likely to complete within six years of commencement in higher education.

These are important messages for stakeholders, some of whom may believe that the standard engineering degree is of three year's duration and that 'most' graduations are in minimum time. The most recent DET report on completion rates does warn against misinterpretation of its published four-year completion rate data.

## 8. GRADUATE OUTCOMES

National reporting on graduate outcomes and employment changed in 2016 with their inclusion in the DET Quality Indicators for Learning and Teaching (QILT) initiative. QILT surveys cover graduate satisfaction, graduate outcomes (employment rates and median salaries), and employer satisfaction, for graduates of postgraduate coursework and research programs, as well as those from undergraduate degrees.

Details and recent trends for employment and remuneration for the Engineering and Related Technologies field of education, compared with others, are provided in Appendix Tables 14. Key points:

- (i) Engineering graduates from undergraduate programs are gaining full-time employment at higher rates than most other areas, and receive higher median salaries. For those completing in 2016 and 2017 (surveyed in the following year):

year/field of education	% in full-time employment	median salary		% in any employment
		male	female	
<b>2016 undergraduate Engineering</b>	<b>79.4%</b>	<b>\$ 63,500</b>	<b>\$ 65,000</b>	<b>86.5%</b>
2016 undergraduates All areas	71.8%	\$ 60,100	\$ 59,000	86.5%
<b>2017 undergraduate Engineering</b>	<b>83.1%</b>	<b>\$ 65,000</b>	<b>\$ 65,000</b>	<b>88.2%</b>
2017 undergraduates All areas	72.9%	\$ 63,000	\$ 60,000	87.0%

- (ii) Women (Appendix Table 14 (b)) who graduate from undergraduate programs in engineering have been paid at higher rates than their male peers in previous years, but there was no difference in the latest data. The median salaries for women graduating from postgraduate coursework awards were 12% less than those for men.
- (iii) Postgraduate coursework graduates in engineering gain employment at slightly lower rates and median salaries than for all fields (Appendix Table 14 (a)). Note that the engineering graduates are from both entry-to-practice programs and programs designed for qualified engineers to advance their knowledge and skills (and who may already be in employment).
- (iv) Research degrees in engineering are not rewarded by a higher employment rate or higher median salary than other disciplines, or a postgraduate coursework degree (Appendix Table 14 (a) and b)).

The Graduate Satisfaction data reported in the QILT report (See Appendix Table 15(a)) show that of the 2017 graduates from undergraduate engineering programs:

- (i) Just under half (49.7%) rated their program in the top two points of a 5-point agreement scale on 'Good Teaching'. This is lowest satisfaction amongst all reported areas of education, but slightly higher than the previous year.
- (ii) In contrast, 82.9% gave high ratings to their 'Generic Skills' acquisition; higher than the all field average.
- (iii) Although 74.8% rated 'Overall Satisfaction' in the top two points of the 5-point agreement scale, this is a lower proportion than other reported areas and the 'all fields' rating.

Postgraduate coursework graduates gave somewhat more favourable ratings. Research graduates rate their experience more highly than other fields, in almost all survey dimensions.

The 2018 Employer Satisfaction Survey recruited 'employer' respondents by asking graduates to nominate their supervisor. As volunteers, those who responded were likely to be well disposed towards the graduates. 86.9% of employers rated Engineering graduates in the top two points of a 5-point agreement scale for 'Overall Satisfaction', higher than the rating for 'all fields', but lower than for last year. In three of the skills areas (Foundation, Collaborative and Technical), Engineering was rated close to or better than 'all fields' (see Appendix Table 15 (b)). For 'Adaptive' and 'Employability', Engineering was rated lower than 'all fields'. These supervisors rated the importance of the qualification highly, and rated well the extent to which it had prepared the graduates for their current employment (see Appendix Table 15 (c)).

## 9. ACADEMIC STAFF DATA AND STUDENT-STAFF RATIOS FOR ACED MEMBERS

From the DET sources, the total academic staff (full time equivalent) in non-casual positions in the University sector (ACED members) are provided in Appendix Table 16, and Figure 7. These totals understate total engineering academic staffing, by three factors:

- some universities with engineering in a multi-field academic structure report zero staff;
- some universities attribute all of the academic staff in such structures against engineering;
- the contributions of casual staff teaching are not included.

The individual university responses for ACED members are shown in Table 17.

The data shows that the number of FTE teaching staff (in Teaching-only and Teaching & Research positions) dropped by 80 in 2017 to 2,305. The number of Research-only staff dropped to 1,670 after attaining its 2015 peak of 1,816.

FTE women in academic positions dropped by 10 from the 2016 figure, while increasing the proportion of women in teaching positions to 15%, and the proportion in research-only positions to 21.9%. The proportion of women in Level C (Senior Lecturer) and Level B (Lecturer) positions (Fig 8b) increased slightly from the 2016 figures, alongside a slight drop in above Level C positions to 11.1%. Clearly women continue to be poorly represented in professorial positions.

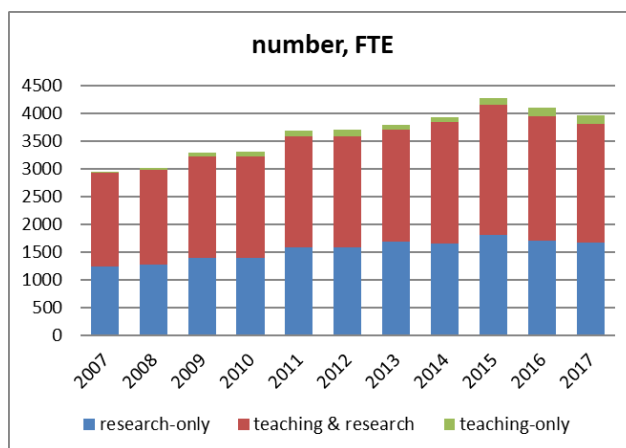


Figure 7 Academic staffing (FTE) in Engineering & Related Technologies, 2007-17

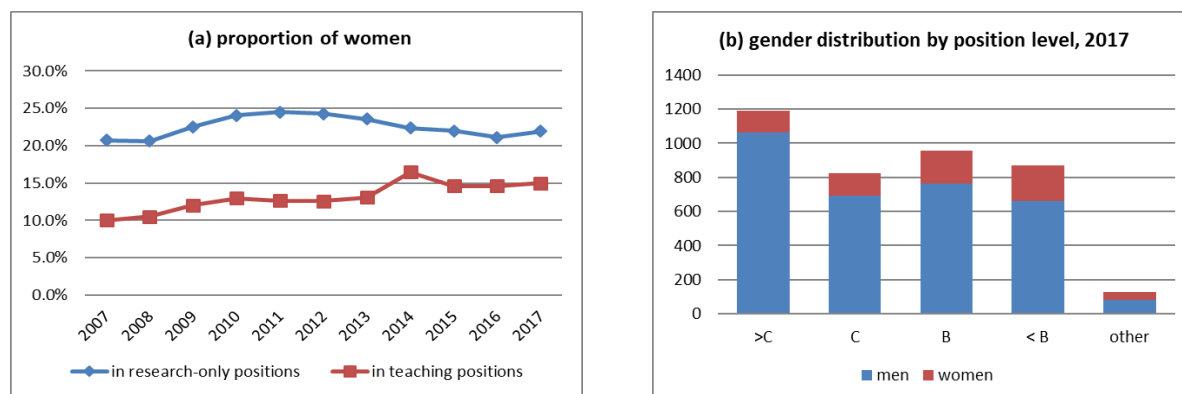


Figure 8 Female engineering academic staff (FTE) in Engineering & Related Technologies: (a) proportions by academic role 2007-17, (b) numbers by gender and position level, 2017

The *raw student-to-academic-staff ratio* is approximately  $(75,999/2,305) = 32.9$ , greater than the figure for 2016, but likely to be an overestimate because of the net under-reporting of staffing numbers. The ratio is also *reduced significantly* by the contributions of casual staff and research staff to teaching, but may also *be increased* where staff in Teaching & Research positions are allocated to full-time research or management positions, or are on study leave, and are replaced by casual staff. Indicative student-staff ratios can be calculated for the ACED member faculties using the data in Table 17. Their interpretation is likely to be institution dependent.

## 10. DISTRIBUTION OF ENROLMENTS, ETC. FOR ACED MEMBERS

Table 17 provides summary data on the commencing and total enrolments and graduation and staffing from all the ACED members.

Table 18 provides a summary of the coursework awards offered, showing the number of engineering branches covered by EA accredited awards (including entry-to-practice masters degrees) and the numbers of other postgraduate masters degrees in two categories: advanced technical awards, and management awards, mostly 'engineering project management'.

From these data it is clear that one institution, the University of New South Wales (including its College at Canberra which is a member of ACED in its own right) has the most enrolments, graduations, and programs.

The sixteen Australian universities in the eleven member Group of Eight Engineering Deans and Associates (that includes Newcastle, Wollongong and Auckland), plus the six 'technology' universities (the ATN group plus QUT and Swinburne) had 76% of domestic engineering enrolments, and 84% of international enrolments.

## 11. CONCLUDING COMMENTS

As in previous years, Tables 2 and 17 raise questions about the completeness and accuracy of the data that ACED member universities are providing to the Higher Education Statistics Unit.

I can provide ACED members with their own items if they are interested, although it would be very time consuming to extract a set for each member. In addition, members should interrogate their own university statistics units to gain insight into any data that appear anomalous.

## 12. SOURCES

The detailed enrolments, graduations, basis of admission, success, retention rates and staffing data presented in the following Tables were purchased from DET.

Load data and less detailed data on enrolments and graduations are available in Tables that may be downloaded from the DET website <https://www.education.gov.au/higher-education-statistics> or compiled from the DET datacube at <http://highereducationstatistics.education.gov.au/>.

The DET website includes links to annual Undergraduate Applications, Offers and Admissions reports, and to a number of visual analytics tools, including for summaries of completions and retention rates. The site also links to the QILT (Quality Indicators for Teaching and Learning) website <https://www.qilt.edu.au/about-this-site> for access to annual Graduate Outcomes and Employer Satisfaction surveys.

ACED takes responsibility for any errors in transcribing and interpreting data from these sources.

**Prof Robin W King**  
**Consultant to ACED**  
**13 March 2019**

### 13. APPENDIX: SUPPORTING TABLES

TABLE 1 ENGINEERING GRADUATIONS 2007-17

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>DOCTORATES</b>	<b>772</b>	<b>697</b>	<b>705</b>	<b>792</b>	<b>782</b>	<b>953</b>	<b>1,113</b>	<b>1,268</b>	<b>1,259</b>	<b>1,358</b>	<b>1,417</b>
domestic total	519	513	479	474	399	496	536	572	603	603	637
% domestic female	21.4%	24.2%	21.1%	22.0%	23.3%	23.2%	24.8%	27.3%	23.2%	27.0%	25.0%
international total	253	184	226	318	383	457	577	696	656	755	780
% international female	18.2%	17.4%	19.9%	19.9%	23.0%	25.2%	27.0%	24.3%	26.7%	23.0%	27.4%
% international	32.8%	26.4%	32.1%	40.2%	49.0%	48.0%	51.8%	54.9%	52.1%	55.6%	55.0%
<b>RESEARCH MASTERS</b>	<b>230</b>	<b>228</b>	<b>185</b>	<b>196</b>	<b>235</b>	<b>212</b>	<b>245</b>	<b>218</b>	<b>229</b>	<b>244</b>	<b>226</b>
domestic total	135	127	99	99	115	100	132	103	108	116	105
% domestic female	25.9%	19.7%	18.2%	23.2%	26.1%	15.0%	22.0%	22.3%	31.5%	31.0%	21.9%
international total	95	101	86	97	120	112	113	115	121	128	121
% international female	21.1%	24.8%	25.6%	33.0%	22.5%	<b>31.3%</b>	26.5%	24.3%	41.3%	27.3%	23.1%
% international	41.3%	44.3%	46.5%	49.5%	51.1%	52.8%	46.1%	52.8%	52.8%	52.5%	53.5%
<b>COURSEWORK MASTERS</b>	<b>2,586</b>	<b>2,878</b>	<b>3,134</b>	<b>3,684</b>	<b>3,829</b>	<b>3,404</b>	<b>3,758</b>	<b>4,138</b>	<b>4,748</b>	<b>5,431</b>	<b>6,348</b>
domestic total	686	690	788	1,024	1,045	1,145	1,335	1,426	1,543	1,567	1,590
% domestic female	20.1%	18.3%	17.6%	18.6%	16.1%	15.4%	17.9%	18.8%	19.4%	17.70%	17.6%
international total	1,900	2,188	2,346	2,660	2,784	2,259	2,403	2,712	3,205	3,864	4,758
% international female	15.4%	18.4%	18.8%	18.7%	18.9%	19.3%	19.5%	19.1%	19.5%	20.7%	22.4%
% international	73.5%	76.0%	74.9%	72.2%	72.7%	66.4%	64.3%	65.5%	67.5%	71.1%	75.0%
<b>OTHER POSTGRADUATE</b>	<b>659</b>	<b>763</b>	<b>829</b>	<b>951</b>	<b>1,098</b>	<b>921</b>	<b>945</b>	<b>958</b>	<b>1,008</b>	<b>774</b>	<b>681</b>
domestic total	447	522	588	672	746	704	763	794	848	643	545
% domestic female	22.4%	20.9%	19.0%	22.2%	17.8%	19.5%	17.6%	21.8%	18.4%	17.9%	16.9%
international total	212	241	241	279	352	217	219	164	160	137	136
% international female	14.6%	19.5%	17.0%	15.1%	13.6%	11.1%	16.0%	18.9%	21.3%	18.2%	19.3%
% international	32.2%	31.6%	29.1%	29.3%	32.1%	23.6%	22.3%	20.7%	18.9%	17.7%	25.0%
<b>BACHELORS</b>	<b>8,076</b>	<b>8,661</b>	<b>8,652</b>	<b>9,149</b>	<b>9,849</b>	<b>10,261</b>	<b>11,018</b>	<b>11,373</b>	<b>11,117</b>	<b>11,561</b>	<b>12,043</b>
domestic total	5,786	6,077	6,063	6,237	6,534	6,795	7,044	7,392	7,634	7,743	7,742
% domestic female	14.8%	14.7%	14.9%	14.7%	14.6%	14.9%	14.6%	15.3%	14.3%	14.60%	14.9%
international total	2,290	2,584	2,589	2,912	3,315	3,466	3,974	3,981	3,483	3,818	4,301
% international female	19.8%	21.2%	18.3%	18.4%	18.2%	18.1%	18.2%	19.9%	19.4%	19.6%	20.3%
% international	28.4%	29.8%	29.9%	31.8%	33.7%	33.8%	36.1%	35.0%	31.3%	33.0%	33.0%
<b>ASSOC DEG &amp; ADV DIPL</b>	<b>159</b>	<b>564</b>	<b>369</b>	<b>417</b>	<b>384</b>	<b>663</b>	<b>617</b>	<b>620</b>	<b>699</b>	<b>670</b>	<b>670</b>
domestic total	133	175	278	320	327	518	479	523	570	543	493
% domestic female	9.0%	11.4%	8.6%	10.9%	~ 8%	~ 7%	8.1%	9.6%	9.5%	10.1%	7.3%
international total	26	389	91	97	57	145	138	97	129	127	165
% international female	7.7%	20.8%	4.4%	5.2%	~11%	~6%	8.0%	12.4%	12.4%	3.9%	13.9%
% international	16.4%	69.0%	24.7%	8.0%	14.8%	21.9%	22.4%	15.6%	18.5%	19.0%	19.0%
<b>OTHER UNDERGRAD</b>	<b>510</b>	<b>76</b>	<b>314</b>	<b>404</b>	<b>534</b>	<b>501</b>	<b>551</b>	<b>1,035</b>	<b>1,029</b>	<b>1,350</b>	<b>1,350</b>
domestic total	233	60	60	109	130	141	152	264	239	285	291
% domestic female	6.4%	15.0%	8.3%	4.6%	~ 8%	~ 7%	13.2%	7.6%	7.5%	7.4%	10.3%
international total	277	16	254	295	404	360	399	771	790	1,065	1,099
% international female	29.2%	31.3%	13.8%	10.8%	~ 11%	~10%	8.0%	10.0%	14.1%	12.0%	13.9%
% international	54.3%	21.1%	80.9%	73.0%	75.7%	71.9%	72.4%	74.5%	76.8%	78.8%	81.4%
<b>ALL GRADUATES</b>	<b>12,992</b>	<b>13,867</b>	<b>14,188</b>	<b>15,590</b>	<b>16,484</b>	<b>16,912</b>	<b>18,286</b>	<b>19,550</b>	<b>20,089</b>	<b>21,394</b>	<b>22,735</b>
domestic total	7,939	8,164	8,355	8,935	9,257	9,896	10,461	11,074	11,545	11,500	<b>11,403</b>
% domestic female	15.9%	16.0%	15.6%	15.9%	15.2%	15.2%	15.5%	16.5%	15.5%	15.7%	<b>15.6%</b>
international total	5,053	5,703	5,833	6,655	7,227	7,016	7,825	8,476	8,544	9,894	<b>11,360</b>
% international female	18.3%	20.0%	18.2%	18.3%	18.0%	18.3%	18.6%	19.2%	19.7%	19.3%	<b>20.9%</b>
% international	38.9%	41.1%	41.1%	42.7%	43.8%	41.5%	42.8%	43.4%	42.5%	46.2%	<b>50.0%</b>

**TABLE 2 UNDERGRADUATE GRADUATIONS 2017, BY AWARD, DURATION AND 4-DIGIT FOE CODE**

YEAR/SOURCE/LEVEL	TOTAL	0300	0301	0303	0305	0307	0309	0311	0313	0315	0317	0399
<b>Domestic</b>												
Assoc Degree, Adv Dip	492	44	0	0	0	8	56	0	28	22	<5	334
up to 3-year Bach	549	10	<5	15	6	22	0	31	28	255	30	152
4-year Bach	5136	816	50	404	25	658	1074	143	594	177	59	1136
> 4-year Bach	2056	703	<5	218	<5	177	250	0	188	63	12	445
<b>TOTAL DOMESTIC</b>	<b>8233</b>	<b>1573</b>	<b>56</b>	<b>637</b>	<b>34</b>	<b>865</b>	<b>1380</b>	<b>174</b>	<b>838</b>	<b>517</b>	<b>104</b>	<b>2067</b>
<b>% female</b>		14.3%	5.4%	27.5%	2.9%	8.8%	12.2%	7.7%	9.4%	14.9%	2.9%	16.4%
<b>~ % of total (ex 300/399)</b>			0.5%	29.4%	0.2%	12.8%	28.4%	2.2%	13.3%	12.9%	0.5%	
<b>International</b>												
Assoc Degree, Adv Dip	167	11	0	0	0	8	28	0	30	3	9	78
up to 3-year Bach	329	15	33	15	3	12	0	3	24	157	26	41
4-year Bach	3911	827	51	262	10	540	632	5	618	68	95	803
> 4-year Bach	105	32	0	10	0	8	14	0	7	9	5	20
<b>TOTAL INTERNATIONAL</b>	<b>4512</b>	<b>885</b>	<b>84</b>	<b>287</b>	<b>13</b>	<b>568</b>	<b>674</b>	<b>8</b>	<b>679</b>	<b>237</b>	<b>135</b>	<b>942</b>
<b>% female</b>		22.6%	19.0%	39.7%	0.0%	6.9%	18.2%	12.5%	16.5%	27.0%	9.6%	22.6%
<b>~ % of total (ex 300/399)</b>			3.1%	10.7%	0.5%	21.2%	25.1%	0.3%	25.3%	8.8%	5.0%	
<b>% international</b>	<b>34.90%</b>	<b>33.52%</b>	<b>50.55%</b>	<b>35.55%</b>	<b>32.26%</b>	<b>54.89%</b>	<b>26.82%</b>	<b>3.93%</b>	<b>46.12%</b>	<b>23.83%</b>	<b>47.11%</b>	<b>27.17%</b>

<p><b>ASCED 4-digit codes</b>                  0300 Engineering &amp; Related Technologies                  0301 Manufacturing Eng. &amp; Tech.                  0303 Process &amp; Resources Engineering                  0305 Automotive Eng. &amp; Tech.                  0307 Mechanical &amp; Industrial Eng &amp; Tech.                  0309 Civil Engineering                  0311 Geomatic Eng. &amp; Tech                  0313 Electrical &amp; Electronic Eng. &amp; Tech,                  0315 Aerospace Eng. &amp; Tech.                  0317 Maritime Eng. &amp; Tech                  0399 Other Engineering &amp; Related Tech's</p>	<p><b>Notes:</b>                  Low numbers (&lt;5) are suppressed in individual providers' returns to avoid identification of individuals. In the aggregates some of these are resolved by subtraction. The percentages calculated ignore the &lt;5 entries.</p> <p>ANU, Curtin, CQUni, JCU, Murdoch UTS, UWA, WSU use code 0300 for most Bachelor degree graduates.</p> <p>CDU, Griffith, Monash, QUT and USQ and use code 0399 for most Bachelor degree graduates</p> <p>"Software engineering" does not appear specifically in the ASCED codes for either engineering or Information Technology (ASCED FOE code 02), so may be classified in the universities' returns in different ways. See Table 19.</p> <p>The 0301 manufacturing engineering sub-code includes "printing", "textile/garment/furniture making", that are likely to be more relevant to sub degree-level HE qualifications offered by the VET sector.</p> <p>The 0315 Aerospace Eng. and Technology includes 3-year civil aviation degrees, taken primarily by students aiming towards the aviation industry. Many of these programs offer commercial pilot training in parallel with the academic award.</p> <p>The full set of ASCED codes is at:  <a href="http://www.abs.gov.au/Ausstats/abs@.nsf/0/E7779A9FD5C8D846CA256AAF001FCA5C?opendocument">http://www.abs.gov.au/Ausstats/abs@.nsf/0/E7779A9FD5C8D846CA256AAF001FCA5C?opendocument</a></p>
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**TABLE 3 TOTAL ENROLMENTS (STUDENTS) 2007-17**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>DOCTORATES</b>	<b>4,340</b>	<b>4,559</b>	<b>5,054</b>	<b>5,567</b>	<b>6,258</b>	<b>7,059</b>	<b>7,427</b>	<b>7,668</b>	<b>8,035</b>	<b>8,338</b>	<b>8,718</b>
domestic total	2,917	2,852	2,866	2,982	3,183	3,404	3,389	3,372	3,617	3,788	3,877
% domestic female	21.6%	22.4%	22.9%	23.8%	23.9%	23.7%	24.9%	25.5%	25.5%	26.1%	26.3%
international total	1,423	1,707	2,188	2,585	3,075	3,655	4,038	4,296	4,418	4,550	4,841
% international female	21.8%	24.8%	26.0%	26.4%	27.1%	26.6%	25.7%	25.9%	25.9%	26.0%	26.8%
% international	32.8%	37.4%	43.3%	46.4%	49.1%	51.8%	54.4%	56.0%	55.0%	54.6%	55.5%
<b>RESEARCH MASTER'S</b>	<b>1,178</b>	<b>1,018</b>	<b>1,120</b>	<b>1,245</b>	<b>1,191</b>	<b>1,194</b>	<b>1,148</b>	<b>1,191</b>	<b>1,182</b>	<b>1,070</b>	<b>1,017</b>
domestic total	732	598	697	769	704	689	662	684	712	660	590
% domestic female	19.4%	20.9%	19.5%	20.0%	19.9%	20.6%	22.4%	21.8%	21.5%	21.4%	21.5%
international total	446	420	423	476	487	505	486	507	470	410	427
% international female	25.1%	26.4%	29.8%	28.6%	27.9%	29.9%	29.8%	27.6%	26.6%	28.8%	26.7%
% international	37.9%	41.3%	37.8%	38.2%	40.9%	42.3%	42.3%	42.6%	39.8%	38.3%	42.0%
<b>COURSEWORK MASTERS</b>	<b>6,699</b>	<b>7,706</b>	<b>8,630</b>	<b>9,266</b>	<b>8,999</b>	<b>9,078</b>	<b>10,566</b>	<b>12,776</b>	<b>15,237</b>	<b>18,381</b>	<b>21,605</b>
domestic total	2,536	2,764	3,164	3,630	3,856	4,061	4,434	4,822	5,159	5,358	5,342
% domestic female	18.1%	18.3%	17.0%	17.3%	16.9%	16.9%	17.7%	18.6%	18.8%	17.9%	17.8%
international total	4,163	4,942	5,466	5,636	5,143	5,017	6,132	7,954	10,078	13,023	16,263
% international female	16.6%	17.5%	17.1%	18.1%	18.4%	18.5%	17.6%	17.7%	18.9%	20.2%	20.4%
% international	62.1%	64.1%	63.3%	60.8%	57.2%	55.3%	58.0%	62.3%	66.1%	70.9%	75.3%
<b>OTHER POSTGRADUATE</b>	<b>2,398</b>	<b>2,486</b>	<b>2,556</b>	<b>2,611</b>	<b>2,555</b>	<b>2,554</b>	<b>2,525</b>	<b>2,286</b>	<b>1,924</b>	<b>1,533</b>	<b>1,390</b>
domestic total	2,007	2,085	2,085	2,151	2,122	2,206	2,177	2,051	1,698	1,328	1,175
% domestic female	18.6%	19.1%	19.0%	19.6%	20.0%	18.8%	19.4%	17.8%	17.4%	17.1%	18.6%
international total	391	401	471	460	433	348	348	235	226	205	215
% international female	15.1%	15.7%	13.8%	16.1%	17.1%	17.2%	19.5%	20.0%	21.2%	21.5%	17.2%
% international	16.3%	16.1%	18.4%	17.6%	16.9%	13.6%	13.8%	10.3%	11.7%	13.4%	15.5%
<b>BACHELORS</b>	<b>51,848</b>	<b>54,556</b>	<b>57,842</b>	<b>61,518</b>	<b>64,236</b>	<b>66,207</b>	<b>69,342</b>	<b>71,560</b>	<b>73,138</b>	<b>74,874</b>	<b>75,767</b>
domestic total	39,058	40,693	42,726	44,656	46,385	48,083	50,547	52,135	52,755	52,722	51,885
% domestic female	13.6%	13.7%	13.7%	14.0%	13.8%	13.4%	13.7%	14.1%	14.4%	14.9%	15.5%
international total	12,790	13,863	15,116	16,862	17,851	18,124	18,795	19,425	20,383	22,152	23,882
% international female	17.9%	17.7%	17.5%	17.6%	17.5%	17.4%	17.7%	18.1%	19.0%	19.3%	20.0%
% international	24.7%	25.4%	26.1%	27.4%	27.8%	27.4%	27.1%	27.1%	27.9%	29.6%	31.5%
<b>ASSOC DEG &amp; AQF DIPL</b>	<b>1,559</b>	<b>1,911</b>	<b>2,419</b>	<b>3,050</b>	<b>3,408</b>	<b>4,318</b>	<b>4,199</b>	<b>3,746</b>	<b>3,654</b>	<b>3,400</b>	<b>3,233</b>
domestic total	1,199	1,681	2,095	2,740	2,980	3,818	3,752	3,401	3,240	2,937	2,719
% domestic female	11.0%	10.7%	9.5%	10.3%	n/a	9.0%	9.5%	9.1%	9.5%	9.4%	9.5%
international total	360	230	324	310	428	500	447	345	414	463	514
% international female	50.0%	3.0%	4.0%	3.2%	n/a	24.6%	11.9%	9.0%	6.8%	8.0%	10.3%
% international	23.1%	12.0%	13.4%	10.2%	12.6%	11.6%	10.6%	9.2%	11.3%	13.6%	15.9%
<b>OTHER UNDERGRADUATE</b>	<b>1,405</b>	<b>1,214</b>	<b>1,470</b>	<b>2,082</b>	<b>1,540</b>	<b>1,649</b>	<b>2,609</b>	<b>3,077</b>	<b>3,040</b>	<b>3,463</b>	<b>3,500</b>
domestic total	658	509	671	971	576	596	1,175	1,206	847	918	869
% domestic female	19.9%	27.7%	26.8%	28.1%	n/a	40.4%	24.0%	18.3%	14.5%	17.0%	8.9%
international total	747	705	799	1,111	1,101	1,053	1,434	1,871	2,193	2,545	2,631
% international female	25.0%	17.6%	12.6%	11.9%	n/a	n/a	8.5%	9.2%	10.2%	11.3%	13.0%
% international	53.2%	58.1%	54.4%	53.4%	71.5%	63.9%	55.0%	60.8%	72.1%	73.5%	75.2%
<b>ALL ENROLMENTS</b>	<b>69,427</b>	<b>73,450</b>	<b>79,091</b>	<b>85,339</b>	<b>88,777</b>	<b>92,059</b>	<b>97,816</b>	<b>102,304</b>	<b>106,210</b>	<b>111,059</b>	<b>115,420</b>
domestic total	49,107	51,182	54,304	57,899	60,251	62,857	66,136	67,671	68,028	67,711	66,647
% domestic female	14.6%	14.8%	14.7%	15.0%	14.8%	14.5%	14.8%	15.0%	14.9%	15.6%	16.0%
international total	20,320	22,268	24,787	27,440	28,526	29,202	31,680	34,633	38,182	43,348	48,773
% international female	18.8%	18.1%	18.0%	18.3%	18.7%	18.4%	18.4%	18.6%	16.9%	19.8%	14.9%
% international	29.3%	30.3%	31.3%	32.2%	32.1%	31.7%	32.4%	33.9%	35.9%	39.0%	42.3%



**TABLE 4 STUDENT LOAD (EFT) IN ENGINEERING AND RELATED TECHNOLOGIES, 2017**

<b>DOMESTIC STUDENT LOAD (2017)</b>	<b>Doctor-ates</b>	<b>Masters</b>	<b>other p-grad</b>	<b>Bach-elor</b>	<b>other u-grad</b>	<b>Enab</b>	<b>Non award</b>	<b>TOTAL</b>
Manufacturing Engineering & Technology	16	63	2	790	47	0	1	<b>917</b>
Process and Resources Engineering	539	349	95	2,869	97	0	9	<b>3,959</b>
Automotive Engineering & Technology	1	3	0	26	0	0	0	<b>30</b>
Mech/Industrial Eng & Technology	437	406	48	6,049	244	1	4	<b>7,188</b>
Civil Engineering	524	737	64	7,525	242	0	8	<b>9,101</b>
Geomatic Engineering	44	101	46	1,148	126	0	1	<b>1,467</b>
Electrical/Electronic Eng & Technology	616	597	17	7,215	266	0	14	<b>8,725</b>
Aerospace Engineering & Technology	54	72	105	1,030	85	1	2	<b>1,350</b>
Maritime Engineering & Technology	31	13	10	239	2	0	0	<b>294</b>
Other Engineering & Related Tech's	459	823	82	6,839	328	3	22	<b>8,556</b>
<b>DOMESTIC TOTAL 2017</b>	<b>2,721</b>	<b>3,164</b>	<b>469</b>	<b>33,730</b>	<b>1,437</b>	<b>5</b>	<b>61</b>	<b>41,587</b>
DOMESTIC TOTAL 2016	2,695	3,249	546	34,783	1,455	7	51	<b>42,787</b>
DOMESTIC TOTAL 2015	2,588	3,114	629	35,134	1,521	46	58	<b>43,087</b>
DOMESTIC TOTAL 2014	2,378	2,730	746	34,681	1,609	55	69	<b>42,267</b>
DOMESTIC TOTAL 2013	2,225	2,399	756	33,571	1,608	62	49	<b>40,856</b>
DOMESTIC TOTAL 2012	2,304	2,080	766	31,962	1,563	65	33	<b>38,890</b>
DOMESTIC TOTAL 2011	2,273	1,918	673	30,118	1,376	62	25	<b>36,630</b>

<b>ALL STUDENT LOAD (2017)</b>	<b>Doctor-ates</b>	<b>Masters</b>	<b>other p-grad</b>	<b>Bach-elor</b>	<b>other u-grad</b>	<b>Enab</b>	<b>Non award</b>	<b>TOTAL</b>
Manufacturing Engineering & Technology	33	732	3	1,071	70	0	13	<b>1,921</b>
Process and Resources Engineering	1,487	1,378	114	5,236	157	0	55	<b>8,426</b>
Automotive Engineering & Technology	1	38	0	44	0	0	1	<b>84</b>
Mech/Industrial Eng & Technology	955	1,972	61	9,579	430	1	64	<b>13,062</b>
Civil Engineering	1,329	3,033	79	11,583	374	0	44	<b>16,443</b>
Geomatic Engineering	107	311	53	1,295	143	0	7	<b>1,917</b>
Electrical/Electronic Eng & Technology	1,510	3,972	35	11,008	451	0	92	<b>17,067</b>
Aerospace Engineering & Technology	77	153	106	1,497	130	1	8	<b>1,973</b>
Maritime Engineering & Technology	57	50	11	445	42	0	4	<b>610</b>
Other Engineering & Related Tech's	1,105	4,075	132	9,514	862	3	90	<b>15,781</b>
<b>ALL STUDENT TOTAL 2017</b>	<b>6,661</b>	<b>15,714</b>	<b>594</b>	<b>51,272</b>	<b>2,659</b>	<b>5</b>	<b>378</b>	<b>77,284</b>
TOTAL (ALL STUDENTS) 2016	6,440	13,264	662	50,828	2,600	7	723	<b>74,525</b>
TOTAL (ALL STUDENTS) 2015	6,207	10,931	749	49,765	2,529	46	975	<b>71,201</b>
TOTAL (ALL STUDENTS) 2014	5,904	9,025	876	48,503	2,511	55	1,058	<b>67,931</b>
TOTAL (ALL STUDENTS) 2013	5,640	7,192	914	47,220	2,408	62	395	<b>63,999</b>
TOTAL (ALL STUDENTS) 2012	5,215	5,913	1,033	44,935	2,275	65	141	<b>59,802</b>
TOTAL (ALL STUDENTS) 2011	4,789	5,650	982	42,911	2,089	62	130	<b>56,816</b>

**TABLE 5 ENGINEERING COMMENCEMENTS (STUDENTS) 2007-17**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>DOCTORATES</b>	<b>950</b>	<b>1,039</b>	<b>1,390</b>	<b>1,476</b>	<b>1,528</b>	<b>1,629</b>	<b>1,789</b>	<b>1,834</b>	<b>1,870</b>	<b>1,833</b>	<b>2,140</b>
domestic number	519	498	586	678	621	601	662	673	718	701	712
% domestic female	19.5%	23.7%	24.4%	24.2%	22.7%	27.6%	25.1%	27.2%	25.2%	24.5%	25.4%
international number	431	541	804	798	907	1028	1127	1161	1152	1132	1428
% international female	22.0%	27.5%	28.0%	24.8%	27.9%	24.8%	26.4%	28.3%	24.7%	27.7%	27.5%
% international	45.4%	52.1%	57.8%	54.1%	59.4%	63.1%	63.0%	63.3%	61.6%	61.8%	66.7%
<b>RESEARCH MASTER'S</b>	<b>369</b>	<b>320</b>	<b>506</b>	<b>521</b>	<b>451</b>	<b>456</b>	<b>433</b>	<b>469</b>	<b>416</b>	<b>375</b>	<b>380</b>
domestic number	234	187	298	303	219	231	234	258	253	214	176
% domestic female	23.5%	23.5%	17.1%	19.5%	21.9%	24.7%	23.5%	19.4%	19.4%	24.3%	24.4%
international number	135	133	208	218	232	225	199	211	163	161	204
% international female	27.3%	27.2%	30.8%	24.8%	28.9%	28.9%	27.6%	26.1%	26.4%	31.1%	26.0%
% international	36.6%	41.6%	41.1%	41.8%	51.4%	49.3%	46.0%	45.0%	39.2%	42.9%	53.7%
<b>COURSEWORK MASTER'S</b>	<b>3,560</b>	<b>3,680</b>	<b>4,549</b>	<b>4,311</b>	<b>3,997</b>	<b>4,448</b>	<b>5,372</b>	<b>6,560</b>	<b>7,564</b>	<b>8,787</b>	<b>10,032</b>
domestic number	1,032	1,128	1,449	1,541	1,562	1,690	1,780	2,043	2,091	2,023	1,931
% domestic female	17.2%	18.8%	16.4%	16.7%	17.6%	15.8%	18.7%	19.2%	18.7%	17.5%	17.3%
international number	2,528	2,552	3,100	2,770	2,435	2,758	3,592	4,517	5,473	6,764	8,101
% international female	16.9%	18.3%	16.8%	20.0%	19.4%	18.7%	17.4%	18.6%	20.3%	20.9%	20.2%
% international	71.0%	69.3%	68.1%	64.3%	60.9%	62.0%	66.9%	68.9%	72.4%	77.0%	80.8%
<b>OTHER POSTGRADUATE</b>	<b>1,203</b>	<b>1,331</b>	<b>1,103</b>	<b>1,447</b>	<b>1,511</b>	<b>1,448</b>	<b>1,416</b>	<b>1,247</b>	<b>1,021</b>	<b>835</b>	<b>772</b>
domestic number	952	1,080	787	1,132	1,101	1,186	1,167	1,118	844	682	594
% domestic female	17.0%	20.0%	17.7%	19.8%	21.4%	18.7%	19.6%	16.5%	18.4%	17.3%	19.4%
international number	251	251	316	315	410	262	249	129	177	153	178
% international female	16.6%	17.7%	13.4%	19.4%	13.2%	16.4%	19.3%	16.3%	21.5%	24.8%	19.1%
% international	20.9%	18.9%	28.6%	21.8%	27.1%	18.1%	17.6%	10.3%	17.3%	18.3%	23.1%
<b>BACHELORS</b>	<b>15,340</b>	<b>15,760</b>	<b>17,363</b>	<b>19,167</b>	<b>18,741</b>	<b>18,818</b>	<b>20,234</b>	<b>21,048</b>	<b>21,406</b>	<b>21,484</b>	<b>21,218</b>
domestic number	11,051	11,295	12,052	12,541	13,152	13,595	14,817	15,085	14,896	14,390	13736
% domestic female	14.4%	14.1%	14.5%	14.4%	13.9%	13.7%	14.4%	15.1%	15.2%	15.7%	16.9%
international number	4,289	4,465	5,311	6,626	5,589	5,186	5,417	5,963	6,510	7,094	7482
% international female	17.9%	17.6%	17.4%	15.1%	11.9%	17.1%	18.3%	18.4%	21.0%	19.1%	20.3%
% international	28.0%	28.3%	30.6%	34.6%	29.8%	27.8%	26.8%	28.3%	30.4%	33.0%	35.3%
<b>ASSOC DEG &amp; ADV DIP</b>	<b>686</b>	<b>975</b>	<b>1,111</b>	<b>1,514</b>	<b>1,532</b>	<b>1,959</b>	<b>2,094</b>	<b>1,562</b>	<b>1,374</b>	<b>1,372</b>	<b>1,275</b>
domestic number	524	842	930	1,357	1,257	1,659	1,890	1,370	1,178	1,136	1031
% domestic female	12.4%	9.9%	8.7%	10.0%	8.2%	7.8%	9.3%	8.3%	10.8%	10.1%	10.8%
international number	162	133	181	157	275	300	204	192	196	236	244
% international female	1.9%	3.0%	5.2%	na	7.2%	8.3%	18.6%	4.7%	6.1%	12.7%	10.7%
% international	23.6%	13.6%	16.3%	10.4%	18.0%	15.3%	54.6%	12.3%	14.3%	17.2%	19.1%
<b>ENABLING &amp; OTHER</b>	<b>1,172</b>	<b>786</b>	<b>1,056</b>	<b>859</b>	<b>1,434</b>	<b>1,307</b>	<b>1,841</b>	<b>2,144</b>	<b>1,988</b>	<b>2,249</b>	<b>2,304</b>
domestic number	688	410	521	798	811	748	836	909	564	655	631
% domestic female	16.3%	26.8%	28.6%	24.4%	45.3%	32.8%	28.1%	19.4%	14.5%	20.0%	n/a
international number	484	376	535	61	623	559	1,005	1,235	1,424	1,594	1673
% international female	21.7%	13.8%	14.0%	12.7%	1.8%	8.8%	8.2%	9.7%	10.5%	12.7%	13.8%
% international	41.3%	47.8%	50.7%	37.6%	43.4%	42.8%	0.0%	57.6%	71.6%	70.9%	72.6%
<b>ALL COMMENCEMENTS</b>	<b>22,704</b>	<b>23,591</b>	<b>27,508</b>	<b>28,975</b>	<b>29,199</b>	<b>30,065</b>	<b>33,179</b>	<b>34,864</b>	<b>35,639</b>	<b>36,935</b>	<b>38,121</b>
domestic number	14,312	15,030	16,994	18,352	18,813	19,710	21,386	21,456	20,544	19,801	18,811
% domestic female	15.0%	15.1%	15.5%	15.8%	15.3%	15.0%	15.6%	15.8%	15.8%	16.1%	16.7%
international number	8,392	8,561	10,514	10,623	10,386	10,355	11,793	13,408	15,095	17,134	19,310
% international female	17.9%	18.3%	17.8%	18.5%	18.1%	17.8%	18.1%	18.4%	19.9%	19.9%	20.2%
% international	37.0%	36.3%	38.2%	36.7%	35.6%	34.4%	35.5%	38.5%	42.4%	46.4%	50.7%

**TABLE 6 PROPORTION OF ALL DOMESTIC COMMENCEMENTS (TO ALL AWARD LEVELS), ENGINEERING & RELATED TECHNOLOGIES AND OTHER AREAS 2007-17**

year	Engineering & Related Technologies	% of total	Health	Natural & Physical Science	Information Technology	Law, Business, Society, Creative Arts (composite FoE's)	total commencing award programs
2007	15,000	5.5%	43,099	21,076	7,839	151,508	271,743
2008	15,440	5.6%	44,812	20,811	7,470	153,908	276,200
2009	16,994	5.5%	49,217	23,633	8,328	167,817	308,821
2010	18,172	5.5%	54,097	26,619	8,704	175,649	329,248
2011	18,813	5.6%	56,628	28,169	9,263	179,222	338,188
2012	19,710	5.4%	61,864	31,847	10,060	190,917	364,197
2013	21,433	5.6%	66,827	33,163	10,292	201,234	384,251
2014	21,456	5.3%	71,419	34,064	11,187	209,246	401,356
2015	20,544	5.2%	75,170	33,639	11,488	209,164	397,296
2016	19,902	4.9%	80,364	35,682	12,347	208,351	405,085
2017	18,816	4.6%	82,657	36,235	14,223	210,302	410,167

**TABLE 7 UNDERGRADUATE DOMESTIC COMMENCEMENTS, ALL FIELDS OF EDUCATION, 2008-17**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Natural & Physical Sciences	17,513	19,919	22,820	24,486	27,892	29,017	29,890	29,175	31,127	31,666
Information Technology	5,659	6,264	6,713	7,361	7,942	8,048	9,098	9,504	9,922	11,529
Engineering & Rel'd Technologies	12,326	13,200	14,186	14,706	15,489	17,123	16,949	16,545	16,027	15,382
Architecture & Building	5,406	5,357	5,746	6,116	6,256	6,232	6,054	6,662	7,059	7,611
Agriculture, Envir'l & Related Studies	3,567	3,834	3,946	3,916	3,900	4,073	3,840	3,536	3,652	3,404
Health	31,582	33,947	37,321	38,458	42,224	47,412	50,509	54,166	58,969	60,317
Education	19,753	21,402	22,473	22,572	25,322	25,765	27,076	26,139	24,761	24,817
Management & Commerce	37,604	38,233	38,229	39,650	43,569	45,447	49,695	48,398	47,890	48,432
Society & Culture	51,112	56,255	61,914	62,524	67,458	71,042	71,925	75,422	74,951	78,332
Creative Arts	19,309	22,112	23,100	24,076	25,679	27,504	27,054	27,481	28,351	28,738
Food, Hospitality & Personal Services	68	62	59	64	47	33	21	16	17	148
<b>TOTAL</b>	<b>203,899</b>	<b>220,585</b>	<b>236,507</b>	<b>243,929</b>	<b>265,778</b>	<b>281,696</b>	<b>292,111</b>	<b>297,044</b>	<b>302,726</b>	<b>312,393</b>
Engineering, proportion of all fields, %	6.0%	6.0%	6.0%	6.0%	5.8%	6.1%	5.8%	5.6%	5.3%	4.9%

**TABLE 8 BASIS OF ADMISSION INTO BACHELORS DEGREES IN ENGINEERING & RELATED TECHNOLOGIES, 2007 – 17**

	DOMESTIC STUDENTS					INTERNATIONAL STUDENTS				
	Total	Higher Ed complete/incomplete Aus or O/S	TAFE/VET award complete or incomplete	Completion of final year of secondary at school or TAFE (Aus or O/S)	Other	Total	Higher Ed complete/incomplete Aus or O/S	TAFE/VET award complete or incomplete	Completion of final year of secondary at school or TAFE (Aus or O/S)	Other
<b>2007</b>	11,051	1,588	704	7,420	1,339	4,289	1,220	389	1,452	1,228
<b>2008</b>	11,295	1,723	691	7,313	1,568	4,465	1,495	251	1,393	1,326
<b>2009</b>	12,052	1,851	727	8,125	1,349	5,311	1,461	389	1,706	1,755
<b>2010</b>	no data collected									
<b>2011</b>	13,154	2,435	978	8,542	1,181	5,589	1,556	359	1,597	2,077
<b>2012</b>	13,595	2,604	904	8,835	1,252	5,223	1,392	388	1,366	2,077
<b>2013</b>	14,817	2,989	1,184	9,119	1,525	5,417	1,310	438	1,694	1,975
<b>2014</b>	15,085	3,665	1,013	8,791	1,534	5,963	2,005	312	1,666	1,980
<b>2015</b>	14,896	3,357	964	8,686	1,889	6,510	2,085	361	1,894	2,170
<b>2016</b>	14,390	3,323	1,046	8,332	1,689	7,094	2,462	451	2,063	2,118
<b>2017</b>	13,736	2,978	897	8,461	1,400	7,480	2,695	581	2,200	2,004
	AS PERCENTAGES					AS PERCENTAGES				
<b>2007</b>	11,051	14.4%	6.4%	67.1%	12.1%	4,289	28.4%	9.1%	33.9%	28.6%
<b>2008</b>	11,295	15.3%	6.1%	64.7%	13.9%	4,465	33.5%	5.6%	31.2%	29.7%
<b>2009</b>	12,052	15.4%	6.0%	67.4%	11.2%	5,311	27.5%	7.3%	32.1%	33.0%
<b>2010</b>	no data collected									
<b>2011</b>	13,154	18.5%	7.4%	64.9%	9.0%	5,589	27.8%	6.4%	28.6%	37.2%
<b>2012</b>	13,595	19.2%	6.6%	65.0%	9.2%	5,223	26.7%	7.4%	26.2%	39.8%
<b>2013</b>	14,817	20.2%	8.0%	61.5%	10.3%	5,417	24.2%	8.1%	31.3%	36.5%
<b>2014</b>	15,085	24.3%	6.7%	58.3%	10.2%	5,963	33.6%	5.2%	27.9%	33.2%
<b>2015</b>	14,896	22.5%	6.5%	58.3%	12.7%	6,510	32.0%	5.5%	29.1%	33.3%
<b>2016</b>	14,390	23.1%	7.3%	57.9%	11.7%	7,094	34.7%	6.4%	29.1%	29.9%
<b>2017</b>	13,736	21.7%	6.5%	61.6%	10.2%	7,480	36.0%	7.8%	29.4%	26.8%

‘Other’ covers: admission on the basis of ‘mature age special provisions’, ‘professional qualifications’, and ‘other’

**TABLE 9 TOP 16 COUNTRIES OF ORIGIN: ONSHORE COMMENCERS IN ENGINEERING & RELATED TECHNOLOGIES, 2016-17**

	P/G Research and Coursework	Bachelors (inc Hons)	Other	Total	P/G Research and Coursework	Bachelors (inc Hons)	Other	Total	over all rank
<b>2016</b>									
China (excludes SARs and Taiwan Province)	3,582	1,992	667	<b>6,241</b>	44.4%	39.3%	38.2%	<b>42.0%</b>	<b>1</b>
India	1,977	371	89	<b>2,437</b>	24.5%	7.3%	5.1%	<b>16.4%</b>	<b>2</b>
Malaysia	94	528	68	<b>690</b>	1.2%	10.4%	3.9%	<b>4.6%</b>	<b>3</b>
Pakistan	384	159	90	<b>633</b>	4.8%	3.1%	5.2%	<b>4.3%</b>	<b>4</b>
Sri Lanka	94	244	98	<b>436</b>	1.2%	4.8%	5.6%	<b>2.9%</b>	<b>5</b>
Viet Nam	125	182		<b>405</b>	1.6%	3.6%	5.6%	<b>2.7%</b>	<b>6</b>
Bangladesh	169	118	< 58	<b>343</b>	2.1%	2.3%	< 3.6%	<b>2.3%</b>	<b>7</b>
Saudi Arabia	121	106	77	<b>304</b>	1.5%	2.1%	4.4%	<b>2.0%</b>	<b>8</b>
Indonesia	107	110	61	<b>278</b>	1.3%	2.2%	3.5%	<b>1.9%</b>	<b>9</b>
Nepal	172	66	< 37	<b>273</b>	2.1%	1.3%	< 3.0%	<b>1.8%</b>	<b>10</b>
Hong Kong (SAR of China)	64	141	< 57	<b>261</b>	0.8%	2.8%	< 3.6%	<b>1.8%</b>	<b>11</b>
Iran	162	15	< 9	<b>182</b>	2.0%	0.3%	< 0.8%	<b>1.2%</b>	<b>12</b>
Singapore	15	129	< 35	<b>178</b>	0.2%	2.5%	< 2.3%	<b>1.2%</b>	<b>13</b>
Kuwait	5	122	22	<b>149</b>	0.1%	2.4%	1.3%	<b>1.0%</b>	<b>14</b>
Thailand	40	60	< 11	<b>110</b>	0.5%	1.2%	< 0.9%	<b>0.7%</b>	<b>15</b>
Iraq	45	< 5		<b>46</b>	0.6%	< 0.2%	0.0%	<b>0.3%</b>	<b>16</b>
All other Countries	903	728	280	<b>1,911</b>	11.2%	14.4%	16.0%	<b>12.8%</b>	
<b>Total</b>	<b>8,059</b>	<b>5,072</b>	<b>1,746</b>	<b>14,877</b>					
<b>2017</b>									
China (excludes SARs and Taiwan Province)	3134	2009	642	5785	40.4%	41.3%	39.7%	<b>40.6%</b>	<b>1</b>
India	2213	331	< 86	2628	28.5%	6.8%	< 5.3%	<b>16.4%</b>	<b>2</b>
Pakistan	402	179	< 142	721	5.2%	3.7%	< 8.8%	<b>4.6%</b>	<b>3</b>
Malaysia	67	366	35	468	0.9%	7.5%	2.2%	<b>4.3%</b>	<b>4</b>
Viet Nam	123	225	79	427	1.6%	4.6%	4.9%	<b>2.9%</b>	<b>5</b>
Nepal	262	92	< 42	394	3.4%	1.9%	< 2.6%	<b>2.7%</b>	<b>6</b>
Sri Lanka	74	266	< 52	390	1.0%	5.5%	< 3.2%	<b>2.3%</b>	<b>7</b>
Bangladesh	171	116	< 45	328	2.2%	2.4%	< 2.8%	<b>2.0%</b>	<b>8</b>
Hong Kong (SAR of China)	50	175	< 61	282	0.6%	3.6%	< 3.8%	<b>1.9%</b>	<b>9</b>
Indonesia	96	117	63	276	1.2%	2.4%	3.9%	<b>1.8%</b>	<b>10</b>
Saudi Arabia	92	114	< 48	251	1.2%	2.3%	< 3.0%	<b>1.8%</b>	<b>11</b>
Iran	190	20	5	214	2.4%	0.4%	0.3%	<b>1.2%</b>	<b>12</b>
Singapore	21	95	19	135	0.3%	2.0%	1.2%	<b>1.2%</b>	<b>13</b>
Kuwait	6	77	11	94	0.1%	1.6%	0.7%	<b>1.0%</b>	<b>14</b>
Thailand	30	39	< 10	76	0.4%	0.8%	< 0.6%	<b>0.7%</b>	<b>15</b>
Iraq	11	0	0	11	0.1%	0.0%	0.0%	<b>0.3%</b>	<b>16</b>
All other Countries	816	640	310	1757	10.5%	13.2%	19.2%	<b>12.8%</b>	
<b>Total</b>	<b>7,758</b>	<b>4,861</b>	<b>1,618</b>	<b>14,237</b>					

**TABLE 10 INDIGENOUS COMMENCEMENTS AND COMPLETIONS IN ENGINEERING & RELATED TECHNOLOGIES, 2015-17**

**Commencements**

	P/G by Research	P/G C'rsewk	Bach. (inc Hons)	Other	Total		
	Persons	Persons	Persons	Persons	Male	Female	Persons
<b>2015</b>							
ACT	0	0	0	0	0	0	0
NSW	< 5	< 5	28	< 5	np	< 5	32
NT	0	0	< 5	< 5	np	< 5	7
QLD	< 5	< 5	45	14	52	12	64
SA	0	0	7	< 5	8	0	8
TAS	0	< 5	11	0	12	0	12
VIC	0	< 5	7	< 5	np	< 5	15
WA	0	< 5	6	0	np	< 5	7
<b>Total</b>	<b>&lt; 5</b>	<b>12</b>	<b>108</b>	<b>23</b>	<b>124</b>	<b>21</b>	<b>145</b>
<b>2016</b>							
ACT	0		< 5	0	< 5	0	< 5
NSW	< 5		38	<< 10	37	6	43
NT	0		< 5	<<< 15	< 5	< 5	6
QLD	< 5		42	< 5	47	9	56
SA	< 5		< 5	< 5	< 5	0	< 5
TAS	< 5		< 5	0	< 5	< 5	< 5
VIC	< 5		7	<<< 15	10	< 5	11
WA	< 5		8	0	11	0	11
<b>Total</b>	<b>12</b>		<b>102</b>	<b>20</b>	<b>115</b>	<b>19</b>	<b>134</b>
<b>2017</b>							
ACT	< 5		0	0	0	< 5	< 5
NSW	9		38	<< 10	42	8	50
NT	0		< 5	<< 10	< 5	< 5	< 5
QLD	< 5		65	7	58	18	76
SA	< 5		10	< 5	13	< 5	14
TAS	< 5		5	0	6	0	6
VIC	< 5		12	<< 10	15	< 5	17
WA	< 5		12	0	9	5	14
<b>Total</b>	<b>21</b>		<b>143</b>	<b>&lt; 19</b>	<b>146</b>	<b>36</b>	<b>182</b>

**Completions**

	P/G by Research	P/G C'rsewk	Bach. (inc Hons)	Other	Total		
	Persons	Persons	Persons	Persons	Male	Female	Persons
<b>2015</b>							
ACT	< 5	0	0	0	0	< 5	< 5
NSW	0	5	12	0	np	< 5	17
NT	0	0	0	< 5	< 5	0	< 5
QLD	0	< 5	13	0	np	< 5	16
SA	0	0	< 5	0	< 5	0	< 5
TAS	0	< 5	< 5	0	< 5	0	< 5
VIC	< 5	< 5	< 5	< 5	np	< 5	7
WA	0	0	< 5	0	< 5	0	< 5
<b>Total</b>	<b>&lt; 5</b>	<b>11</b>	<b>34</b>	<b>&lt; 5</b>	<b>43</b>	<b>6</b>	<b>49</b>
<b>2016</b>							
ACT	0		0	0	0	0	0
NSW	5		14	< 5	19	< 5	20
NT	0		0	< 5	< 5	0	< 5
QLD	0		17	8	22	3	25
SA	0		< 5	0	< 5	0	< 5
TAS	0		< 5	0	< 5	0	< 5
VIC	< 5		< 5	0	< 5	0	< 5
WA	< 5		0	0	< 5	0	< 5
<b>Total</b>	<b>7</b>		<b>38</b>	<b>10</b>	<b>51</b>	<b>4</b>	<b>55</b>
<b>2017</b>							
ACT	0		0	0	0	0	0
NSW	< 5		8	< 5	9	3	12
NT	0		0	0	0	0	0
QLD	< 5		19	<< 5	23	2	25
SA	0		< 5	<< 5	< 5	0	< 5
TAS	0		< 5	< 5	< 5	0	< 5
VIC	0		< 5	0	< 5	0	< 5
WA	< 5		< 5	0	5	0	5
<b>Total</b>	<b>8</b>		<b>34</b>	<b>&lt; 10</b>	<b>45</b>	<b>5</b>	<b>50</b>

**TABLE 11 ANNUAL SUCCESS RATES FOR BACHELORS DEGREE STUDENTS IN ENGINEERING & RELATED TECHNOLOGIES, 2007-17**

		Domestic Students								Overseas Students							
		Males				Females				Males				Females			
		Full-time Number	Part-time Success, %	Full-time Number	Part-time Success, %	Full-time Number	Part-time Success, %	Full-time Number	Part-time Success, %	Full-time Number	Part-time Success, %	Full-time Number	Part-time Success, %	Full-time Number	Part-time Success, %		
2006	Commencing	8,163	83.2	923	69.4	1,315	86.4	101	70.4	2,802	83.0	442	77.2	618	89.4	60	76.5
2006	Overall	26,952	86.6	5,870	74.8	4,418	90.5	717	78.9	8,463	85.6	1,547	80.7	1,906	91.0	231	79.6
2007	Commencing	8,639	83.6	1,008	68.5	1,538	87.9	103	68.1	3,055	83.6	503	74.6	709	90.0	68	80.0
2007	Overall	28,158	87.0	5,924	74.2	4,676	90.4	702	76.2	8,887	85.8	1,680	79.0	2,054	90.7	246	80.5
2008	Commencing	8,900	84.1	991	69.8	1,503	87.3	138	65.8	3,137	85.6	588	82.6	719	91.6	79	83.2
2008	Overall	29,559	88.0	5,846	75.0	4,912	91.0	733	76.0	9,672	87.0	1,824	82.0	2,186	92.0	281	81.0
2009	Commencing	9,481	84.6	994	71.1	1,682	88.1	114	69.0	3,952	86.5	489	84.8	864	89.8	70	84.0
2009	Overall	31,167	87.5	6,046	75.2	5,625	90.8	682	76.2	10,962	87.6	1,637	83.5	2,424	90.1	247	86.3
2010	Commencing	nd	84.0	nd	68.0	nd	88.0	nd	75.0	nd	85.0	nd	82.0	nd	92.0	nd	71.0
2010	Overall	nd	87.0	nd	75.0	nd	90.0	nd	78.0	nd	88.0	nd	82.0	nd	92.0	nd	83.0
2011	Commencing	10,276	83.8	1,021	71.0	1,662	87.5	139	72.6	4,125	83.4	517	78.1	943	89.8	33	69.3
2011	Overall	33,421	86.9	6,530	74.6	5,605	90.6	793	77.7	13,102	87.0	1,665	81.0	2,961	91.4	176	82.7
2012	Commencing	10,720	83.9	1,185	67.2	1,740	86.5	161	69.9	3,953	83.5	427	77.4	860	89.1	37	71.0
2012	Overall	34,698	87.0	7,062	74.6	5,708	90.2	816	77.5	11,328	86.9	1,693.0	79.5	2,958	91.1	212	80.1
2013	Commencing	nd	83.6	nd	69.6	nd	87.8	nd	70.7	nd	83.7	nd	79.0	nd	86.3	nd	nd
2013	Overall	nd	86.6	nd	74.7	nd	90.2	nd	80.3	nd	86.7	nd	77.1	nd	91.6	nd	81.2
2014	Commencing	nd	83.3	nd	72.0	nd	87.5	nd	73.0	nd	83.1	nd	78.7	nd	89.6	nd	71.3
2014	Overall	nd	86.7	nd	74.3	nd	89.8	nd	79.3	nd	85.9	nd	78.7	nd	91.4	nd	83.6
2015	Commencing	nd	83.9	nd	69.9	nd	87.8	nd	76.7	nd	83.4	nd	75.2	nd	89.4	nd	81.7
2015	Overall	nd	87.2	nd	75.1	nd	90.4	nd	78.7	nd	86.2	nd	76.9	nd	91.2	nd	82.9
2016	Commencing	nd	84.4	nd	68.3	nd	87.1	nd	71.2	nd	83.8	nd	80.5	nd	90.5	nd	77.7
2016	Overall	nd	86.9	nd	73.8	nd	89.2	nd	75.7	nd	86.1	nd	78.8	nd	90.9	nd	74.6

The success rate is the proportion of course units passed of those in which a student is enrolled for the year.

**TABLE 12 ANNUAL RETENTION RATES IN INSTITUTION FOR BACHELORS DEGREE STUDENTS IN ENGINEERING & RELATED TECHNOLOGIES, 2005 – 2015**

		Domestic Students								Overseas Students							
		Males				Females				Males				Females			
		Full-time		Part-time		Full-time		Part-time		Full-time		Part-time		Full-time		Part-time	
		Number	Retention %	Number	Retention %	Number	Retention %	Number	Retention %	Number	Retention %	Number	Retention %	Number	Retention %	Number	Retention %
2005	Commencing	8,058	88.0	1,007	67.4	1,195	89.8	120	70.0	2,816	90.5	390	73.3	650	91.4	54	83.3
2005	Overall	23,337	88.7	4,692	69.1	3,731	91.5	557	71.5	6,969	89.6	988	68.0	1,539	90.9	128	71.9
2006	Commencing	8,356	87.3	918	69.8	1,347	88.3	102	73.5	2,822	90.4	433	78.1	620	92.6	59	81.4
2006	Overall	23,676	87.9	4,658	69.4	3,701	89.7	521	70.3	7,068	89.2	1,115	67.1	1,563	91.7	158	69.0
2007	Commencing	8,855	86.6	1,013	69.6	1,588	90.2	105	67.6	3,097	90.4	503	68.0	702	92.3	71	67.6
2007	Overall	25,715	88.1	4,853	70.1	4,239	91.6	524	72.9	7,781	88.6	1,283	70.0	1,744	90.7	186	66.7
2008	Commencing	8,714	89.3	945	69.4	1,450	89.5	129	64.3	3,064	91.7	582	81.1	686	94.2	79	78.5
2008	Overall	26,101	90.4	4,626	72.2	4,240	91.8	555	69.4	8,214	89.2	1,335	72.9	1,752	93.2	193	74.1
2009	Commencing	nd	88.6	nd	64.3	nd	89.5	nd	66.1	nd	93.7	nd	83.2	nd	94.4	nd	69.1
2009	Overall	nd	89.6	nd	69.1	nd	91.4	nd	70.5	nd	91.2	nd	72.6	nd	93.4	nd	70.6
2010	Commencing	9,678	88.1	973	69.2	1,657	90.6	115	80.0	4,069	92.9	487	83.6	899	94.7	73	79.5
2010	Overall	29,085	89.1	4,882	69.5	4,840	91.5	527	72.1	10,633	89.7	1,154	71.3	2,285	92.6	178	66.9
2011	Commencing	10,226	88.9	1,011	69.6	1,650	90.8	132	68.2	4,032	91.3	514	77.6	916	92.8	33	60.6
2011	Overall	29,967	89.4	5,270	70.7	4,872	91.3	599	69.9	11,170	89.9	1,166	69.5	2,475	91.8	96	58.3
2012	Commencing	nd	88.7	nd	66.4	nd	90.2	nd	62.8	nd	92.2	nd	82.7	nd	94.5	nd	67.6
2012	Overall	nd	89.1	nd	69.3	nd	91.5	nd	68.0	nd	91.5	nd	74.4	nd	94.4	nd	65.1
2013	Commencing	nd	87.6	nd	65.7	nd	89.1	nd	66.5	nd	91.8	nd	84.0	nd	94.5	nd	76.7
2013	Overall	nd	88.6	nd	70.3	nd	90.2	nd	70.1	nd	89.9	nd	71.7	nd	93.8	nd	71.5
2014	Commencing	nd	87.8	nd	68.0	nd	90.7	nd	66.7	nd	91.9	nd	87.3	nd	94.8	nd	87.0
2014	Overall	nd	89.0	nd	68.2	nd	92.1	nd	68.6	nd	90.3	nd	72.5	nd	93.9	nd	71.1
2015	Commencing	nd	87.8	nd	67.0	nd	88.9	nd	67.8	nd	88.2	nd	83.9	nd	92.6	nd	87.8
2015	Overall	nd	89.9	nd	72.1	nd	91.4	nd	73.5	nd	88.6	nd	72.4	nd	92.8	nd	78.0

Retention rate is the proportion of students who, in the following year, graduated or returned to the same university. No data has been provided for 2016. See Section 7.2.



**TABLE 13 ANNUAL RETENTION RATES IN ENGINEERING FOR BACHELORS DEGREE STUDENTS IN ENGINEERING & RELATED TECHNOLOGIES, 2005 – 2015**

		Domestic Students								Overseas Students							
		Males				Females				Males				Females			
		Full-time Number	Retention %	Part-time Number	Retention %	Full-time Number	Retention %	Part-time Number	Retention %	Full-time Number	Retention %	Part-time Number	Retention %	Full-time Number	Retention %	Part-time Number	Retention %
2005	Commencing	7,648	82.8	960	62.4	1,129	81.6	113	58.4	2,684	88.2	385	72.7	603	88.7	53	83.0
2005	Overall	23,332	85.8	4,692	66.2	3,730	87.0	557	65.9	6,968	87.5	988	67.2	1,539	89.2	128	71.9
2006	Commencing	7,988	84.2	882	65.0	1,270	83.0	95	63.2	2,733	87.8	427	77.1	603	89.9	57	79.0
2006	Overall	23,668	86.7	4,658	66.9	3,701	87.7	521	66.8	7,067	87.6	1,115	66.9	1,561	89.9	158	67.7
2007	Commencing	8,451	83.6	969	64.2	1,481	84.1	93	54.8	2,999	89.7	501	74.1	682	90.5	68	80.9
2007	Overall	24,841	86.3	4,717	66.7	4,034	87.8	502	68.1	7,600	88.1	1,274	72.4	1,704	89.0	183	72.1
2008	Commencing	8,714	84.7	945	66.8	1,450	82.1	129	60.5	3,064	89.9	582	80.9	686	91.0	79	78.5
2008	Overall	26,101	87.2	4,626	69.9	4,240	87.2	555	64.5	8,214	87.5	1,335	72.5	1,752	90.9	193	73.1
2009	Commencing	nd	85.0	nd	60.3	nd	83.8	nd	57.8	nd	92.7	nd	82.5	nd	92.1	nd	67.7
2009	Overall	nd	87.2	nd	67.0	nd	87.7	nd	65.6	nd	90.5	nd	72.4	nd	92.2	nd	70.0
2010	Commencing	9,678	83.9	973	66.7	1,657	84.6	115	72.2	4,069	92.0	487	83.6	899	93.3	73	78.1
2010	Overall	29,085	86.7	4,882	67.9	4,840	87.5	527	67.0	10,633	88.8	1,154	70.8	2,285	91.6	178	66.3
2011	Commencing	10,226	83.5	1,011	66.1	1,650	82.5	132	62.1	4,032	89.9	514	77.2	916	92.0	33	57.6
2011	Overall	29,967	86.4	5,270	68.5	4,872	87.0	599	66.9	11,170	88.9	1,166	69.0	2,475	90.9	96	57.3
2012	Commencing	nd	84.5	nd	63.9	nd	84.8	nd	58.3	nd	90.7	nd	82.2	nd	93.1	nd	67.6
2012	Overall	nd	86.4	nd	67.2	nd	88.1	nd	64.6	nd	90.4	nd	73.8	nd	93.3	nd	64.3
2013	Commencing	nd	83.2	nd	62.1	nd	83.5	nd	62.2	nd	90.6	nd	84.0	nd	92.6	nd	76.7
2013	Overall	nd	85.7	nd	68.1	nd	86.3	nd	66.8	nd	88.8	nd	71.0	nd	92.4	nd	70.0
2014	Commencing	nd	83.5	nd	65.9	nd	85.3	nd	65.1	nd	90.9	nd	86.7	nd	92.9	nd	85.2
2014	Overall	nd	86.2	nd	65.9	nd	88.2	nd	64.0	nd	89.5	nd	71.6	nd	92.8	nd	69.8
2015	Commencing	nd	92.5	nd	73.7	nd	95.8	nd	76.2	nd	92.0	nd	85.0	nd	94.8	nd	93.9
2015	Overall	nd	93.2	nd	76.4	nd	96.3	nd	77.3	nd	92.2	nd	75.3	nd	95.0	nd	79.9

Up to 2014, the Retention rate is the proportion of students who, in the following year, graduated or returned to the same university to study engineering. For 2015, the rate was adjusted to allow for re-enrolment in engineering at another university. No data has been provided for 2016. See Section 7.2.

TABLE 14 GRADUATE EMPLOYMENT AND MEDIAN SALARIES

(a) Employment status, survey years 2016-18

Year of Survey (previous year graduates)	% in full-time study	% in work, of all available for any work	% in FT work, of all available for FT work	% in PT work of all employed	% in PT work seeking more hours	% in PT work not seeking more hours	% of FT employed reporting skills not fully used	% of all employed reporting skills not fully used	% of FT employed reporting skills not fully used because of lack of jobs in area of expertise	% of all employed reporting skills not fully used because of lack of jobs in area of expertise
<b>2016</b>										
U/G Engineering	13.6	83.9	76.4	16.6	10.2	4.8	25.5	33.6	36.5	37
ALL U/G	21.8	86.4	70.9	38.4	20.5	14.1	29.1	42.1	26.8	25.8
P/G C'swkEngin'g		88.1	83.6				32.5	34.5	31.6	34.7
ALL P/G Coursew'k		92.4	85.1				35	43.1	25.5	25.4
P/G Res'ch Engin'g		84.2	75.5				23.9	27.4		
All Research		90.3	80.1				27.1	30.7		
<b>2017</b>										
U/G Engineering	14.2	86.5	79.4	18.0	9.9	6.0	24.3	33.7	29.8	31.0
ALL U/G	20.7	86.5	71.8	37.9	19.7	14.2	28.2	41.1	27.4	25.2
P/G C'swkEngin'g		88.9	86.0				35.1	37.8	27.1	30.8
ALL P/G Coursew'k		92.6	86.1				28.1	30.9	25.3	25.5
P/G Res'ch Engin'g		86.1	74.3				22.1	26.2		
All Research		90.6	80.4				25.2	29.9		
<b>2018</b>										
U/G Engineering	15.0	88.2	83.1	16.4	9.1	5.6	21.6	29.7	26.4	25.6
ALL U/G	18.7	87.0	72.9	37.3	19.2	14.0	27.1	38.9	23.5	23.0
P/G C'swkEngin'g		88.8	84.6				32.1	34.6	21.5	23.0
ALL P/G Coursew'k		92.9	86.9				26.9	29.2	22.7	22.9
P/G Res'ch Engin'g		90.7	85.0				24.8	27.0		
All Research		91.8	82.3				24.5	27.9		

(b) Graduate salaries (medians) for full-time work

Course level	2015		2016		2017		2018	
	male	female	male	female	male	female	male	female
U/G Engineering	\$ 60,000	\$ 63,000	\$ 62,600	\$ 62,300	\$ 63,500	\$ 65,000	\$ 65,000	\$ 65,000
ALL U/G	\$ 55,000	\$ 53,000	\$ 60,000	\$ 56,400	\$ 60,100	\$ 59,000	\$ 63,000	\$ 60,000
P/G Coursework Engineering	\$ 100,000	\$ 80,000	\$ 98,600	\$ 85,000	\$ 90,000	\$ 75,000	\$ 90,000	\$ 79,100
ALL P/G	\$ 90,000	\$ 73,000	\$ 90,000	\$ 75,700	\$ 91,000	\$ 76,000	\$ 92,000	\$ 79,000
P/G Research Engineering	\$ 82,800	\$ 76,700	\$ 85,000	\$ 82,000	\$ 87,700	\$ 83,400	\$ 90,000	\$ 83,000
ALL P/G Research	\$ 84,000	\$ 80,300	\$ 88,300	\$ 83,300	\$ 89,800	\$ 86,000	\$ 90,200	\$ 90,000

Note: undergraduate figures are for graduates in first full time employment, age less than 25

(c) Median salary comparisons for Bachelors Graduates, surveys 2012-18

	2012	2013	2014	2015	2016	2017	2018
Dentistry	\$ 80,000	\$ 80,000	\$ 75,000	\$ 80,000	\$ 83,500	\$ 78,300	\$ 83,000
Medicine	\$ 60,000	\$ 60,000	\$ 60,000	\$ 65,000	\$ 69,200	\$ 70,300	\$ 73,000
<b>Engineering</b>	<b>\$ 63,000</b>	<b>\$ 64,000</b>	<b>\$ 62,000</b>	<b>\$ 60,000</b>	<b>\$ 62,600</b>	<b>\$ 64,000</b>	<b>\$ 65,000</b>
Computing & Information systems	\$ 53,000	\$ 52,500	\$ 55,000	\$ 54,000	\$ 60,000	\$ 59,900	\$ 60,000
Science & Mathematics	\$ 55,000	\$ 57,000	\$ 60,000	\$ 60,000	\$ 55,200	\$ 57,500	\$ 61,000
Business & Management	\$ 48,000	\$ 49,000	\$ 50,000	\$ 50,000	\$ 55,000	\$ 55,200	\$ 58,000

**TABLE 15 GRADUATE SATISFACTION AND EMPLOYER SATISFACTION**

(a) **Graduate satisfaction surveys 2017 and 2018.** Percentages of graduates expressing agreement or strong agreement with a relevant satisfaction statement

	Overall satisfact'n	Good teaching	Generic skills	Super-vision	Intellect'l climate	Skills develop't	Infra-structre	Thesis examin'n	Goals & expect's
<b>2017</b>									
<b>U/G Engineering</b>	<b>73.6</b>	<b>47.6</b>	<b>82.4</b>						
Science & Mathematics	83.4	67.4	85.2						
Computing & Info Systems	74.8	58.9	77.2						
Pharmacy	83.4	63.4	83.6						
Business & Management	77.8	58.3	78.7						
<b>U/G All fields</b>	<b>79.4</b>	<b>63.0</b>	<b>81.5</b>						
<b>P/G Coursework Engineering</b>	<b>78.8</b>	<b>62.9</b>	<b>82.1</b>						
<b>P/G Coursework All fields</b>	<b>81.9</b>	<b>69.0</b>	<b>78.2</b>						
<b>P/G Research Engineering</b>	<b>86.5</b>			<b>83.6</b>	<b>68.5</b>	<b>94.5</b>	<b>82.8</b>	<b>82.2</b>	<b>93.1</b>
<b>P/G Research All fields</b>	<b>84.4</b>			<b>81.5</b>	<b>61.3</b>	<b>94.3</b>	<b>77.0</b>	<b>79.4</b>	<b>91.6</b>
<b>2018</b>									
<b>U/G Engineering</b>	<b>74.8</b>	<b>49.7</b>	<b>82.9</b>						
Science & Mathematics	83.9	67.8	84.5						
Computing & Info Systems	74.7	59.7	78.7						
Pharmacy	84.1	62.9	84.1						
Business & Management	76.9	56.7	78.9						
<b>U/G All fields</b>	<b>79.7</b>	<b>62.9</b>	<b>81.3</b>						
<b>P/G Coursework Engineering</b>	<b>78.3</b>	<b>63.1</b>	<b>83.6</b>						
<b>P/G Coursework All fields</b>	<b>81.7</b>	<b>68.7</b>	<b>78.4</b>						
<b>P/G Research Engineering</b>	<b>87.5</b>			<b>81.0</b>	<b>66.1</b>	<b>93.0</b>	<b>81.5</b>	<b>83.2</b>	<b>92.5</b>
<b>P/G Research All fields</b>	<b>85.0</b>			<b>82.0</b>	<b>61.1</b>	<b>92.6</b>	<b>74.6</b>	<b>81.3</b>	<b>91.7</b>

(b) **Employer Satisfaction Survey – skills areas, 2018, selected fields of education.**

Data are percentages of employers expressing agreement or strong agreement with a relevant statement on graduate skills. Previous year data in parentheses.

Field of education	Foundation	Adaptive	Collaborative	Technical	Employability	Overall satisfaction
<b>2016 All fields</b>	92.0	88.4	84.6	92.2	83.8	84.3
<b>2017 All fields</b>	93.4	90.1	85.9	93.3	85.0	83.6
<b>2018 All fields</b>	<b>93.5</b>	<b>89.9</b>	<b>88.7</b>	<b>93.8</b>	<b>86.5</b>	<b>84.8</b>
<b>Engineering &amp; Related Technologies</b>	<b>95.0 (95.6)</b>	<b>88.3 (90.8)</b>	<b>88.6 (88.7)</b>	<b>94.4 (95.7)</b>	<b>83.3 (85.0)</b>	<b>86.9 (89.9)</b>
Natural & Physical Sciences	97.3 (94.6)	90.9 (89.3)	88.6 (88.0)	96.3 (94.5)	89.4 (85.7)	87.0 (80.1)
Information Technology	92.9 (95.1)	89.7 (91.1)	90.5 (90.4)	94.4 (95.5)	84.6 (85.7)	87.2 (82.1)
Health	93.5 (93.6)	89.1 (88.8)	88.6 (86.3)	93.9 (94.6)	84.8 (84.3)	86.6 (88.6)
Management & Commerce	92.8 (92.5)	88.4 (91.0)	87.4 (84.7)	92.0 (91.7)	88.2 (86.1)	83.4 (79.8)

(c) **Employer Satisfaction Survey – importance ratings by graduates and their supervisors, 2018, selected fields of education.** Previous year data in parentheses.

Field of education	% of respondents rating qualification 'important' or 'very important'		% of respondents rating 'well' or 'very well' the extent to which qualification prepared graduates	
	Graduates	Supervisors	Graduates	Supervisors
<b>All fields</b>	<b>56.5 (56.3)</b>	<b>63.8 (63.8)</b>	<b>88.1 (88.2)</b>	<b>92.1 (93.2)</b>
<b>Engineering &amp; Related Technologies</b>	<b>59.2 (59.6)</b>	<b>67.7 (70.9)</b>	<b>89.0 (89.3)</b>	<b>92.3 (94.9)</b>
Natural & Physical Sciences	46.7 (50.2)	61.5 (45.2)	84.2 (85.4)	91.0 (90.1)
Information Technology	47.8 (41.0)	45.3 (34.5)	85.4 (84.5)	91.6 (93.0)
Health	74.2 (72.6)	79.3 (78.9)	92.5 (90.8)	93.4 (94.0)
Management & Commerce	39.1 (40.2)	49.4 (47.6)	87.3 (89.6)	91.3 (92.7)

**TABLE 16 ACADEMIC STAFF (FTE) IN ENGINEERING & RELATED TECHNOLOGIES, 2007-17 (not including casual staffing, DET data)**

**(a) Academic staff (FTE) by gender and functional category**

staff categories	2007	2008	2009	2010	2011	2012	2013	2014*	2015	2016	2017
<b>academics, male</b>											
teaching-only	+22	38	51	69	100	98	76	67	88	127	121
research-only	978	1,010	1,082	1,051	1,194	1,194	1,295	1,279	1,417	1,344	1,304
teaching & research	1,524	1,529	1,611	1,602	1,747	1,759	1,755	1,824	1,919	1,907	1,839
<b>sub-total, male</b>	<b>2,524</b>	<b>2,577</b>	<b>2,744</b>	<b>2,722</b>	<b>3,040</b>	<b>3,052</b>	<b>3,126</b>	<b>3,170</b>	<b>3,424</b>	<b>3,378</b>	<b>3,264</b>
<b>academics, female</b>											
teaching-only	2	3	9	13	16	20	18	17	24	33	38
research-only	256	262	315	333	387	383	399	371	399	360	366
teaching & research	170	181	218	236	252	248	257	288	320	328	307
<b>sub-total, female</b>	<b>428</b>	<b>446</b>	<b>543</b>	<b>621</b>	<b>656</b>	<b>652</b>	<b>675</b>	<b>676</b>	<b>743</b>	<b>721</b>	<b>711</b>
<b>total academics</b>	<b>2,952</b>	<b>3,023</b>	<b>3,287</b>	<b>3,343</b>	<b>3,696</b>	<b>3,704</b>	<b>3,801</b>	<b>3,846</b>	<b>4,167</b>	<b>4,099</b>	<b>3,975</b>
% research-only	41.8%	42.1%	42.5%	41.4%	42.8%	42.6%	44.6%	42.9%	43.6%	41.6%	42.0%
% female	14.5%	14.8%	16.5%	18.6%	17.7%	17.6%	17.8%	17.6%	17.8%	17.6%	17.9%
<b>total teaching</b>	<b>1,718</b>	<b>1,751</b>	<b>1,889</b>	<b>1,920</b>	<b>2,115</b>	<b>2,125</b>	<b>2,106</b>	<b>2,196</b>	<b>2,351</b>	<b>2,395</b>	<b>2,305</b>

**(b) Academic staff (FTE) by gender and level of appointment**

	>C	C	B	< B	other
<b>Men, 2013</b>	907	692	796	553	178
<b>Women, 2013</b>	104	104	204	169	95
<b>Men, 2014</b>	951	675	826	537	184
<b>Women, 2014</b>	115	111	201	156	85
<b>Men, 2015</b>	1031	751	908	636	99
<b>Women, 2015</b>	127	132	212	201	61
<b>Men, 2016</b>	1078	735	867	618	80
<b>Women, 2016</b>	145	132	198	191	56
<b>Men, 2017</b>	1061	693	764	663	83
<b>Women, 2017</b>	132	129	195	208	47

**Note:** Seven ACED member universities did not provide staffing data to DET for 2017 – also see Table 17

**TABLE 17 STUDENT AND STAFF SUMMARY DATA FOR ACED MEMBERS, 2017**

University	commencing students			completions			total enrolled students			Load EFTSL	Staff (FTE - non-casual)			
	intern'			intern'			dom	intern'l	total		T-only	R-only	T & R	Total
	dom	I	total	dom	I	total								
Charles Sturt Uni	48	3	51	19		19	93	3	96	76	0	<<10	< 5	<<<15
Macquarie Uni	321	209	530	53	38	91	830	396	1,226	623	< 5	< 13	< 30	<<<48
Southern Cross Uni	106	17	123	40		40	241	17	258	100	nd	nd	nd	nd
The Uni of Newcastle	453	241	694	278	133	411	1,890	714	2,604	1,691	< 5	102	88	< 195
The Uni of Sydney	931	1,096	2027	508	800	1,308	3,389	3,118	6,507	5,045	< 5	93	118	< 226
UNSW (inc. Canberra)	2,144	2,694	4838	1,265	1,386	2,651	7,849	6,352	14,201	8,845	5	210	323	538
Uni of Tech Sydney	926	1268	2194	510	654	1,164	3,723	2,739	6,462	4,932	<< 10	77	150	<<237
Uni of Wollongong	446	665	1111	335	325	660	1,762	1,627	3,389	2,489	0	117	85	202
Western Sydney Uni	698	417	1115	208	81	289	1,805	702	2,507	1,988	< 10	< 20	105	<< 135
Deakin University	328	570	898	123	244	367	1,261	1,284	2,545	1,666	< 18	< 11	< 36	<<< 65
Federation Uni Aust	142	118	260	119	27	146	420	177	597	272	nd	nd	nd	nd
La Trobe University	92	134	226	31	96	127	303	326	629	423	nd	nd	nd	nd
Monash University	898	1,424	2322	567	706	1,273	4,016	4,168	8,184	5,345	0	94	127	203
RMIT University	1,627	1,735	3362	1,157	1,047	2,204	5,377	4,443	9,820	6,506	0	74	156	230
Swinburne U of Tech	906	1,212	2118	490	710	1,200	3,085	3,203	6,288	4,466	<< 10	38	92	<< 140
The Uni of Melbourne	453	1105	1558	445	701	1,146	1,350	2,613	3,963	3,721	< 11	110	84	< 205
Victoria University	170	239	409	119	161	280	561	528	1,089	902	<< 10	< 14	58	<<< 82
CQ University	302	210	512	201	7	208	1,077	246	1,323	723	nd	nd	nd	nd
Griffith University	587	250	837	391	221	612	1,844	757	2,601	1,590	< 5	< 11	54	<< 70
James Cook University	188	12	200	94	6	100	583	43	626	414	0	0	26	26
Queensland U of Tech	1,104	339	1443	591	270	861	4,002	966	4,968	3,058	< 5	92	91	< 188
The Uni of Queensl'nd	930	502	1432	773	400	1,173	4,094	1,591	5,685	4,121	< 14	369	145	< 528
Uni of Southern Qld	875	123	998	424	97	521	3,299	442	3,741	1,623	< 5	< 29	70	<< 104
Uni of Sunshine Coast	118	7	125	48		48	403	17	420	195	nd	nd	nd	nd
Curtin Uni of Tech	805	809	1614	585	713	1,298	3,257	3,214	6,471	4,462	< 21	61	101	< 183
Edith Cowan Uni	253	467	720	95	268	363	715	1,241	1,956	1,096	< 5	< 5	< 28	<<< 38
Murdoch University	101	34	135	75	27	102	427	149	576	305	<< 10	< 5	< 18	<<< 33
The University of WA	400	306	706	445	208	653	1,296	747	2,043	1,974	<< 10	69	54	<< 133
Flinders University	268	113	381	74	48	122	710	238	948	693	<< 10	< 15	44	<<< 69
The Uni of Adelaide	586	538	1124	447	345	792	2,456	1,509	3,965	2,657	< 12	61	< 79	<< 152
Uni of South Australia	357	306	663	314	319	633	1,247	895	2,142	1,385	< 16	36	59	< 111
Uni of Tasmania	365	279	644	207	189	396	991	697	1,688	1,124	< 24	7	< 41	<< 72
Charles Darwin Uni	122	86	208	35	45	80	347	225	572	311	< 5	<< 10	< 24	<<<< 39
The Aust National Uni	178	231	409	130	158	288	715	679	1,394	891	< 5	31	54	< 90
Uni of Canberra	44	24	68		6	6	90	31	121	163	nd	nd	nd	nd
<b>TOTAL 2017</b>	<b>18,272</b>	<b>17,783</b>	<b>36,055</b>	<b>11,196</b>	<b>10,436</b>	<b>21,632</b>	<b>65,508</b>	<b>46,097</b>	<b>111,605</b>	<b>75,875</b>	<b>159</b>	<b>1,670</b>	<b>2,164</b>	<b>4,223</b>
TOTAL 2016	19,370	15,650	35,020	11,276	8,942	0,218	6,716	0,743	107,459	73,138	160	1,704	2,235	4,099
% change 2016 - 2017	-5.67	13.6	3.0	-0.7	16.7	7.0	-1.8	13.1	3.9	3.7				

**Notes**

1. Student data for FoE3 from the Higher Education Statistics ucube website.
2. FoE3 includes surveying and civil aviation, and may exclude software engineering, if the university classifies the latter in IT (See Table 19).
3. Staff data is from DET HEd Statistics Unit, purchased by ACED, underestimates totals due to no data (nd) being recorded for some providers.
4. The number of '< 5' entries in component data are indicated. (Thus << 10 is a number in the range 2 - 8.)
5. UNSW Canberra is an additional member of ACED.
6. Staff data for RMIT University are brought forward from 2016 data.

**TABLE 18 SUMMARY OF ENGINEERING COURSEWORK PROGRAMS OFFERED BY ACED MEMBERS, 2019**

University (ACED member)	EA accredited programs					advanced "MEngSci" awards	"M-mgt" awards
	Assoc Deg /Adv Dip	BEngTech branches	BEng(Hons) branches	dual degree options	MEng branches		
Charles Sturt University	-	1 P	-	-	1 P	-	-
Macquarie University	-	-	5 F, 1 P	3	-	-	-
Southern Cross University	-	-	1 F, 3 P	-	-	-	2
University of New South Wales (NSW)	-	-	21 F, 1 P	5	5 F, 1 P	25	2
The University of Newcastle	-	-	8 F, 1 P	9	8 P	9	1
The University of Wollongong	-	-	10 F	8	5 F, 5 P	1	2
University of Sydney	-	-	16 F	7	8 F, 4 P	14	2
University of Technology Sydney	-	-	8 F, 2P	5	3 P	10	2
Western Sydney Uniy (inc. College)	4 P	5 P	5 F	6	6 F	-	-
Deakin University	-	-	4 F	-	-	3	1
Federation University Australia	-	-	6 F, 1 P	-3	3 F	1	1
La Trobe University	-	-	2 P	-	-	2	1
Monash University	-	-	9 F	8	-	9	1
RMIT University	7	-	12 F, 1 P	5	1 P	8-	
Swinburne University of Technology	-	-	8 F, 1 P	3	-	17	1
The University of Melbourne	-	-	-	-	11 F, 2P	4	1
Victoria University	-	-	4 F, 1P-	-	-	5	-
Central Queensland University	3 F, 1 P	3 F	3 F	-	3 P	-	3
Griffith University	-	-	6 F	4	-	4	2
James Cook University	-	-	4 F	2	-	-	-
Queensland University of Technology	-	-	8 F	4	4 P	2	2
The University of Queensland	-	-	8 F	9	6 P	7	1
University of Southern Queensland	6 F, 3P	8 F	9 F	3	13 F, 2P	1-	2
University of the Sunshine Coast	-	-	2 F	1	-	-	-
Curtin University of Technology	-	1 F	8 F	2	-	11	1
Edith Cowan University	--	1 F	13 F, 3 P	-	6 F, 4 P-	-	-
Murdoch University	1 P	-	5 F, 1P	-	-	3	-
The University of Western Australia	-	-	-	-	6 F, 1 P	-	1
Flinders University	-	-	8 F	5	2 F, 2P	6	-
The University of Adelaide	-	-	17 F	5	9 F-	3	-
University of South Australia	-	-5	5 F, 1 P	-	-	5	2
University of Tasmania (inc. AMC)	-	-	7 F	1	2 P	-	-
Charles Darwin University	-	1 F, 3 P	4 F	-	4 F	-	-
The Australian National University	-	-	5 F, 1P	14	3P	4-	2
University of Canberra	-	-	1 F	-	-	2	-
UNSW Canberra at ADFA	-	2 F	4 F	2	-	4	1

- Notes:**
- EA accreditation status from EA weblist, viewed 22 Jan 2019 F: Full Accreditation, P: Provisional Accreditation
  - "MEngSci" and "M-mgt" programs from provider websites.
  - "Branches": the number of branches of engineering covered (not necessarily the total number of accredited programs); double majors are not counted separately from constituent single majors.
  - "Dual degrees": the number of areas in which an additional Bachelors degree outside engineering may be taken (includes "dual", "combined", "double" and "concurrent" models).
  - UNSW and UQ offer MEng extensions to selected BEng(Hons) degrees.
  - UTS offers a BEng(Hons) Diploma of Engineering Practice including extended industrial experience placement(s), this restricts dual degrees options.
  - CQU offers a BEng(Hons) Diploma of Professional Practice (Co-op Engineering) including extended industry placements

**TABLE 19 SUBFIELDS IN ASCED FIELDS OF EDUCATION 03 and 02 ENGINEERING AND RELATED TECHNOLOGIES**

**03 ENGINEERING AND RELATED TECHNOLOGIES**

<b>0301</b>	<b>MANUFACTURING ENGINEERING AND TECHNOLOGY</b>	<b>0309</b>	<b>CIVIL ENGINEERING</b>
030101	Manufacturing Engineering	030901	Construction Engineering
030103	Printing	030903	Structural Engineering
030105	Textile Making	030905	Building Services Engineering
030107	Garment Making	030907	Water and Sanitary Engineering
030109	Footwear Making	030909	Transport Engineering
030111	Wood Machining and Turning	030911	Geotechnical Engineering
030113	Cabinet Making	030913	Ocean Engineering
030115	Furniture Upholstery and Renovation	030999	Civil Engineering, n.e.c.
030117	Furniture Polishing	<b>0311</b>	<b>GEOMATIC ENGINEERING</b>
030199	Manufacturing Engineering and Technology, n.e.c.	031101	Surveying
<b>0303</b>	<b>PROCESS AND RESOURCES ENGINEERING</b>	031103	Mapping Science
030301	Chemical Engineering	031199	Geomatic Engineering, n.e.c.
030303	Mining Engineering	<b>0313</b>	<b>ELECTRICAL &amp; ELECTRONIC ENG'G AND TECHNOLOGY</b>
030305	Materials Engineering	031301	Electrical Engineering
030307	Food Processing Technology	031303	Electronic Engineering
030399	Process and Resources Engineering, n.e.c.	031305	Computer Engineering
<b>0305</b>	<b>AUTOMOTIVE ENGINEERING AND TECHNOLOGY</b>	031307	Communications Technologies
030501	Automotive Engineering	031309	Communications Equip't Installation & Maintenance
030503	Vehicle Mechanics	031311	Powerline Installation and Maintenance
030505	Automotive Electrics and Electronics	031313	Electrical Fitting, Electrical Mechanics
030507	Automotive Vehicle Refinishing	031315	Refrigeration and Air Conditioning Mechanics
030509	Automotive Body Construction	<b>0315</b>	<b>AEROSPACE ENGINEERING AND TECHNOLOGY</b>
030511	Panel Beating	031501	Aerospace Engineering
030513	Upholstery and Vehicle Trimming	031503	Aircraft Maintenance Engineering
030515	Automotive Vehicle Operations	031505	Aircraft Operation
030599	Automotive Engineering and Technology, n.e.c.	031507	Air Traffic Control
<b>0307</b>	<b>INDUSTRIAL ENGINEERING AND TECHNOLOGY</b>	031599	Aerospace Engineering and Technology, n.e.c.
030701	Mechanical Engineering	<b>0317</b>	<b>MARITIME ENGINEERING AND TECHNOLOGY</b>
030703	Industrial Engineering	031701	Maritime Engineering
030705	Toolmaking	031703	Marine Construction
030707	Metal Fitting, Turning and Machining	031705	Marine Craft Operation
030709	Sheetmetal Working	031799	Maritime Engineering and Technology, n.e.c.
030711	Boilermaking and Welding	<b>0399</b>	<b>OTHER ENGINEERING AND RELATED TECHNOLOGIES</b>
030713	Metal Casting and Patternmaking	039901	Environmental Engineering
030715	Precision Metalworking	039903	Biomedical Engineering
030717	Plant and Machine Operations	039905	Fire Technology
030799	Mechanical and Industrial Eng'g and Tech'y, n.e.c.	039907	Rail Operations
		039909	Cleaning
		039999	Engineering and Related Technologies, n.e.c.

**02 INFORMATION TECHNOLOGY**

<b>0201</b>	<b>COMPUTER SCIENCE</b>	<b>0203</b>	<b>INFORMATION SYSTEMS</b>
020101	Formal Language Theory	020301	Conceptual Modelling
020103	Programming	020303	Database Management
020105	Computational Theory	020305	Systems Analysis and Design
020107	Compiler Construction	020307	Decision Support Systems
020109	Algorithms	020399	Information Systems, n.e.c.
020111	Data Structures	<b>0299</b>	<b>OTHER INFORMATION TECHNOLOGY</b>
020113	Networks and Communications	029901	Security Science
020115	Computer Graphics	029999	Information Technology, n.e.c.
020117	Operating Systems		
020119	Artificial Intelligence		
020199	Computer Science, n.e.c.		