The Future of Engineering

Professor Julien Epps, Dean of Engineering
21% projected job growth*

2024 Engineering Landscape

21% projected job growth over the next 10 years*

Engineers are required to be multi-skilled
Students study complimentary generalist courses such as computing

Occupations highest in the demand
IT professionals, Mining Engineers, Civil Engineering, Renewable Energy Engineers and Telecommunications Engineers**

Leading Innovation
Some of the newest jobs to emerge in Australia require Engineering: Quantum Hardware Engineer, Sustainability Engineer, Data Scientist, Nuclear Safety Engineer, Senior Advisor - Decarbonisation

<table>
<thead>
<tr>
<th>Engineering related occupations requiring a tertiary qualification</th>
<th>Projected employment growth 10 year (2023 - 2033)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Managers</td>
<td>16%</td>
</tr>
<tr>
<td>Engineering Managers</td>
<td>18%</td>
</tr>
<tr>
<td>ICT Managers</td>
<td>22%</td>
</tr>
<tr>
<td>Design, Engineering, Science and Transport Professionals</td>
<td>20%</td>
</tr>
<tr>
<td>Surveyors and Spatial Scientists</td>
<td>19%</td>
</tr>
<tr>
<td>Engineering Professionals (Biomedical, Clean Energy, Renewable, Decarbonisation and other)</td>
<td>21%</td>
</tr>
<tr>
<td>Chemical and Materials Engineers</td>
<td>23%</td>
</tr>
<tr>
<td>Civil Engineering Professionals</td>
<td>18%</td>
</tr>
<tr>
<td>Electrical and electronics Engineers</td>
<td>22%</td>
</tr>
<tr>
<td>Industrial, Mechanical, Manufacturers, Production Engineers</td>
<td>23%</td>
</tr>
<tr>
<td>Mining Engineers</td>
<td>23%</td>
</tr>
<tr>
<td>Chemists, and Food and Wine Scientists</td>
<td>21%</td>
</tr>
<tr>
<td>ICT Professionals</td>
<td>19%</td>
</tr>
<tr>
<td>Software and Applications Programmers</td>
<td>22%</td>
</tr>
<tr>
<td>Database and Systems Administrators, and ICT Security Specialists</td>
<td>22%</td>
</tr>
<tr>
<td>ICT Support and Test Engineers</td>
<td>23%</td>
</tr>
<tr>
<td>Telecommunications Engineering Professionals</td>
<td>21%</td>
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</tbody>
</table>

Average Growth 21%

Please note percentages have been rounded up to the nearest whole number

Australia will experience an engineering workforce shortage of 200,000 by 2040*

Australia needs more, and more diverse, Engineering graduates

- Australia will be short 200,000 engineers by 2040 as only 8.5% of Australian university students graduate with engineering degrees compared with 12% in Canada and 23% in Germany.

- Australia relies on approx. 500,000 qualified engineers to tackle its most pressing challenges, from climate change to clean energy transition and complex infrastructure needs. Engineers are crucial to the future of transport systems, sustainable cities, and overall national resilience.*

- We need to do a better job at preventing critical skills leakage: Just 66% of engineers work in engineering roles.

- Less than 2 in 10* engineering students are women and women make-up only 15% of the engineering workforce

* UNSW has ~27% female commencing undergraduate students

Source: Engineers Australia - Australian Engineering Employment Vacancies, and Professionals Australia - Engineering a Better Future: Australia’s Growing Crisis in Engineering
How is UNSW bridging the gap?
Multiskilled engineering graduates

Name: Sudam Dias  
Degree studied: BEng (Hons) Electrical  
Current role: Senior Firmware Engineer

Name: Jade Gavin  
Degree studying: BEng (Hons) Mechatronics  
Industrial Training: Mining Engineering

• Interdisciplinary curriculum
• Minor in Nuclear Engineering and Humanitarian Engineering
• 20 Double Degrees within the Faculty of Engineering or with another Faculty.
Diverse Student Experience

Women In Engineering Program
Scholarships, mentoring programs

Gateway/Portfolio entry
Increasing access to all students

Careers and Employability
Pre-employment workshops, industry fairs and a dedicated placement team

Clubs and Societies
Faculty supported societies to support diversity such as TWEET and Queer Students in STEM

ChallENG Program
Unique experiential learning opportunities
Graduate Outcomes

89.4% of UNSW Engineering Graduates found employment within the first three months*

Our graduates are highly sought after due to the reputation of our alumni and rankings

UNSW produces Australia’s highest-earning graduates*

UNSW remains on top of Go8 for median salary;
$70k compared to $68k national and $67k Go8 average**


** 2022 QILT Survey
How can we work together?

Encourage students to study STEM
Promote studying STEM subjects beyond year 10

On-Campus Events
Experience days for hands-on learning

Stay Connected
Contact our dedicated undergraduate manager to organise bespoke workshops