A new chapter in engineering education

Become an industry partner

You're invited to join us

Charles Sturt Engineering and your organisation

We're looking for industry partners to work with us to build the future of engineering.

Your organisation will host our student engineers and join us in leading the way in establishing a different kind of engineer.

Being a Charles Sturt Engineering industry partner benefits your organisation, and the broader community too. You'll be contributing to much more than the mentorship of a cadet engineer.

By working with us to create skilled, job-ready graduates, you'll be helping to:

- boost the agility of your organisation
- facilitate the growth of business and infrastructure
- keep regional tertiary education strong
- increase professional capability
- support your community.

You'll have an unprecedented opportunity to showcase your organisation to our student engineers. You can trial potential future engineers and then employ graduates who are job-ready from day one.

We work with you to solve problems

Our engineering program has been designed to give student engineers an experience like no other. As a Charles Sturt Engineering industry partner you'll have access to more than just a cadet engineer - you'll gain the support and knowledge of our network of academic staff and our engineering cohort.

Our team-based learning environment can help your business broaden and foster growth opportunities through:

- engagement and networking with students from other organisations
- ongoing professional development for your cadet engineer
- involvement in cutting-edge design and research projects supervised by academics
- ownership of the intellectual property and outcomes of their projects.

What's in it for your organisation?

A work-ready cadet engineer

Our cadets are ready to hit the ground running. Our practical focus and innovative curriculum means our student engineers are prepared for real engineering work from day one. Your cadet will have skills in engineering plans, AutoCAD, Australian Standards, engineering reports, communication and project management.

A project-ready cadet engineer

Our cadets undertake project work early in their course, so they already have a realistic and practical mindset to their work. Student engineers have completed design projects on roads, stormwater drainage, simple foundations and structures, and more - before even starting as a cadet.

A cadet engineer nurtured by academics and their fellow students

Your cadet engineer will be supported by our academic community and their fellow students. Each cadet has an individual academic mentor in their first two placements.

A growing cadet engineer

Your cadet will learn continually from our online Topic Tree while they work. With access to our on-demand curriculum they can learn a new aspect of engineering, and reinforce and contextualise it with the practical experience gained on the job with your organisation.

A cadet engineer who will graduate sooner

Your cadet will work with you four days a week while also studying online. Because of your partnership, their on the job training is recognised in the course, so they are still counted as studying a full-time load. Our students graduate sooner and with more work experience than from any other engineering degree in Australia that includes more than three months work experience.


EWB Challenge
Charles Sturt Uni
Marcus
Zac
Stanford
Ethan
Hastings

A new chapter in engineering education

Our course is designed to keep us ahead of the curve in engineering education and innovation. Working in close consultation with our partners and industry advisory committee, we anticipate and respond to the needs of industry and community, and fine-tune our curriculum to meet those needs.

Entrepreneurial graduates

As the only Australian engineering school hosted within a business faculty, we're able to bring together technical excellence, communication, financial and management skills to enhance our graduates' ability to make a difference as leaders in their workplace and community.

Four one-year embedded paid work placements

After 1.5 years of full-time study at Charles Sturt in Bathurst, student engineers continue their education as cadet engineers working in industry. During paid work placements, our theoretical curriculum is studied online. It's not just learning engineering, it's living it.

An innovative curriculum

We've built this program from the ground up, so we can be at the leading edge of educational technology and teaching methods. Our curriculum continues to evolve based on what actually works to meet the current and future needs of our students and our industry partners.

A head start on chartered status

The additional time offered by our master's qualification allows Charles Sturt student engineers to achieve much more than the minimum entry level to the profession. Their embedded work in industry provides our graduates with opportunities to demonstrate Chartered Professional Engineer (CPEng) competencies prior to graduation, fast-tracking their path to being recognised as autonomous professionals.

We're Engineers Without Borders Challenge repeat champions

Since our course began in 2015, Charles Sturt Engineering students have won one of the top awards on three separate occasions, prevailing over more than a dozen other Australian universities. The photo opposite shows our 2019 winners.

Partner with us

Charles Sturt Engineering is seeking industry partners who share our vision of creating innovative and entrepreneurial engineers.

We have rapidly gained a reputation with our industry partners for providing skilled cadets who are work ready and add value to the workplace.

Our dynamic course is proven to produce cadets who are proactive team members with essential problem-solving skills.

During their time on placement at your organisation, our cadet engineers work to solve real-world challenges by applying academic expertise to your projects.

Steps to becoming a Charles Sturt Engineering industry partner

1. Let's talk. Get in touch to discuss becoming an industry partner.
   Ken Lingabala ~~**Peter Thew** Principal~~ Engineer in Residence
   Email: engineering@csu.edu.au
   Phone: ~~02 6338 6300~~ 02 6338 4409
2. Prepare an advertisement for our website so cadets can approach you.
3. Recruit and select your cadet engineer from those who apply.
4. Download our Host Training Manual, which tells you everything you need to know.
   bjbs.csu.edu.au/workplace-learning/engineering
5. Sign the formal paperwork.
6. Your cadet engineer starts placement. Placements start in July each year and run for 12 months.

Visit **bjbs.csu.edu.au/workplace-learning/engineering** to find out more.

Placement stages

Pre-placement

Anytime
Contact us to discuss a placement.

October-April
Advertise your position, receive applications

April-May
Shortlist, interview, choose and appoint your cadet.

During placement

July
Placements commence.

July-June
Cadets and host engineers are contacted periodically by academic support team members to ensure the placement is on track.

April-May
Cadets and hosts discuss and decide if placement will end in June or be extended for a second year.

June
Placements conclude or are renewed.

About Charles Sturt Engineering

We offer a master's-level qualification over 5.5 years. Student engineers graduate with a Bachelor of Technology (Civil) / Master of Engineering (Civil) and an impressive portfolio of work competencies and experience.

We've planned the course in three phases.

The curriculum is built on three pillars.

- Problem-based learning pillar
- Professional development pillar
- Topic Tree pillar.

The look and feel of each pillar is very similar from year to year. However, the level of knowledge and skill demonstrated by the student engineers in their portfolio is expected to increase each session, reaching (and exceeding) the Engineers Australia Professional Engineer competencies by the end of phase three.

Phase one (1.5 years)

Student engineers experience three sessions of face-to-face, group-based learning in our purpose-built and award-winning facilities at Charles Sturt's Bathurst campus. Setting the pace for the rest of the course, phase one introduces students to the three learning pillars. At the end of phase one, they are ready to step into their first of four one-year paid work placements.

We also offer a bachelor s level (with honours) qualification over four years. This is the same as the master s course for the first two and a half years, but includes only one year as a cadet.

Phase two (2 years)

The three learning pillars continue as student engineers develop their skills and knowledge while embedded in paid workplace positions. As they start to develop their portfolio and work towards their Cornerstone Thesis, our student engineers continue to study online engineering theory and develop skills through Performance Planning and Review.

Phase three (2 years)

As their career continues in paid employment, our student engineers have the opportunity to implement and further develop their skills as professional engineers. As they consolidate their engineering portfolio and work towards their Capstone Thesis, they continue to study advanced and specialist topics in civil engineering online as they grow from cadet to professional engineer.

Find out more

→ **study.csu.edu.au/engineering**

Course outline

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<tr><th colspan="2"></th><th>Problem-based learning pillar</th><th>Professional development pillar</th><th>Civil Engineering
Topic Tree pillar</th></tr>
<tr><td rowspan="4">Phase 1</td><td rowspan="4">Face to Face - Student Engineer</td><td>Engineering Challenge 0 (ENG160) 2pt</td><td rowspan="2">Performance Planning and Review – Student Engineer (ENG180) 4pt</td><td rowspan="2">Topic Tree – Student Engineer (ENG173) 36pt</td></tr>
<tr><td>Engineering Challenge 1 (ENG161) 14pt</td></tr>
<tr><td>Engineering Challenge 2 (ENG162) 14 pt</td><td rowspan="2"></td><td rowspan="2">Topic Tree – Introductory (ENG171) 12pt</td></tr>
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<tr><td rowspan="2">Phase 2</td><td>1st Placement – Junior Cadet</td><td>Engineering Portfolio – Junior Cadet (ENG290) 28pt</td><td>Performance Planning and Review – Junior Cadet (ENG280) 6pt</td><td>Topic Tree – Junior Cadet Engineer (ENG273) 24pt</td></tr>
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<tr><td rowspan="3">Phase 3</td><td>3rd Placement – Senior Cadet</td><td>Engineering Portfolio – Senior Cadet (ENG490) 28pt</td><td>Performance Planning and Review - Senior Cadet (ENG480) 6pt</td><td>Topic Tree – Senior Cadet Engineer (ENG473) 24pt</td></tr>
<tr><td rowspan="2">4th Placement – Professional Cadet</td><td rowspan="2">Engineering Capstone Thesis (ENG599) 32pt</td><td>Engineering Portfolio - Professional (ENG592) 2 pt</td><td rowspan="2">Advanced Topics in Civil Engineering (ENG571) 16pt</td></tr>
<tr><td>Performance Planning and Review - Professional Engineer (ENG580) 4pt</td></tr>
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Problem-based learning pillar

Practical, problem-based learning that includes realistic challenges during student engineers' first 1.5 years on campus, as well as real projects brought from work placements and theses over the next four years. Students build a portfolio that shows the work they've done, the knowledge and skills they've acquired, along with a reflective self-assessment of their learning.

Professional development pillar

As they grow from student engineer to professional engineer, these subjects play an important role in developing students as reflective practitioners. This part of the curriculum is about providing both the student engineers and the academics with feedback to help them maintain progress at an appropriate rate. It also helps maintain balance between problem-based learning and mastery-learning pillars of engineering theory.

Civil Engineering Topic Tree pillar

The Topic Tree is all about giving the student engineers the power to build their knowledge to fit their own learning needs. Rather than being constrained by subjects that define when and where they learn particular material, engagement with the Topic Tree is motivated by the practical challenges of students' problem-based learning during their first three sessions, and then in parallel with their industry work placements for the remainder of the degree. So student engineers apply their knowledge when they learn it, rather than trying to apply theories they learned in classes years ago. This reinforces their knowledge with experience.

Keystone curriculum highlights

We conduct regular performance planning and review sessions throughout work placements as our student engineers progress from junior cadets to professional engineers.

In their second and fourth placements each cadet writes a thesis, where they tackle a real problem challenging their industry employer. They solve it under the guidance of their manager, academics and colleagues.

Students develop a portfolio of engineering experiences and competencies which are signed off by their supervisors. This evidence counts toward their learning outcomes.

Cadet Engineer Andrew Wallace on site inspecting a bridge in Queensland

Frequently asked questions

How do I recruit cadet engineers?

Following the process outlined in our step-by-step guide (on page 9), we will work with you to facilitate the best-fit cadet for your organisation. Industry placements commence in July each year.

What is expected of our organisation?

You'll provide experienced engineers employed by your organisation to supervise the cadet engineers during their placement. You'll ensure our cadets are provided with engineering work that is appropriate for their academic year level and ability.

How much do I pay our cadet engineer?

You will need to meet or exceed our minimum salary benchmarks. These benchmarks are based on award obligations and are created in light of market conditions in our regions.

Visit **bjbs.csu.edu.au/workplace-learning/engineering** to see our benchmark salaries.

How many days per week will cadet engineers work?

Four days per week or 80 percent full time equivalent, plus one full day per week for study.

What support do we receive?

Prior to commencement, every industry partner receives briefing and training about our industry host support network. Our academic staff will continue to support the student engineers and your organisation as students work through their specialist topics in support of their project work. At regular intervals during the work placement, we will arrange reviews to ensure the placements are meeting expectations for both your organisation and the cadet engineer.

How much time will the cadet engineers spend at intensive schools?

Most placements include a one-week intensive school as part of the underlying subjects. Often this will overlap with our annual EngFest in June.

Can we host more than one cadet engineer?

Yes. You can host as many cadet engineers as you have capacity for, as long as you are able to provide appropriate support and training.

What happens if the placement or the cadet engineer isn't the best fit?

Our performance planning and review process ensures that cadets and organisations can provide feedback on the effectiveness of the placement. Any placement that cannot be made to work effectively may be terminated. The full details of the responsibilities of the student, your organisation and Charles Sturt Engineering will be provided in the formal agreement.

Can cadet engineers do more than one placement with the same organisation?

Yes, as long as their work placement opportunities continue to grow and evolve with their increased capabilities.

We want to ensure that our students experience a range of working environments, so more than two placements at the same organisation will need special approval.

Charles Sturt University Engineering

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