



Curtin University

FACULTY OF SCIENCE
AND ENGINEERING
STRATEGIC PLAN

2020 | 2025

DELIVERING EXCELLENCE



“Science and Engineering at Curtin University has a tremendous track record of excellence. Our research has pushed the boundaries of fundamental research, has made critical contributions to industry and has led to significant commercialisation. Our teaching produces graduates of the highest quality who are sought after by employers and who go on to excel as global citizens. We deliver impact and excellence across the University’s many campuses through global partnerships and alliances.

Our Strategic Plan for 2020-25 will continue to deliver excellence across everything we do, but in so doing it recognises the challenges of a fast changing world and the new opportunities that come with that. We look forward to working with all our staff, students and stakeholders to deliver the Plan over the next few years.”

Professor Jeremy Kilburn

Pro Vice-Chancellor of the Faculty of Science and Engineering

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CURTIN UNIVERSITY'S STRATEGIC PLAN 2017-2020

Curtin University is a vibrant and globally engaged institution. We are innovative in our thinking and we have a track record of embracing change. Our graduates are highly sought after by industry and our alumni community comprises leaders all over the world. We celebrate diversity, have a strong commitment to social justice and pride ourselves on offering a rich campus life for our students and our staff.

As we move into the next exciting phase of our journey, our focus will be on delivering excellence. We will continue to transform our learning environments in order to leverage the opportunities afforded by new technologies, aiming to deliver high quality learning outcomes irrespective of mode of delivery. Our goal is to ensure that our graduates are career capable, well-rounded individuals who reflect the University's values and signature behaviours and are proud Curtin ambassadors.

Our recent success in research has underpinned our improvements in international university rankings. We will seek to develop our areas of research strength, at the same time as pursuing emerging areas of research capability. By embracing a culture of innovation, engagement and impact, we will provide commercialisation and entrepreneurship opportunities for our staff and students, ensuring that we play a key role in helping to drive the knowledge-based industries of the future.

Developing a clear and comprehensive global strategy, strengthened by deep international partnerships and alliances, will enhance our ambition to be a genuinely global university. At the same time, we will not weaken our resolve to deliver impact in education and research for the benefit of our local communities. On our Bentley campus, the Greater Curtin development will play a critical role in helping us to further intensify our linkages with industry, business and the broader community. At the same time, on our Malaysian campus, investments in new biotechnology and engineering infrastructure will create fresh opportunities for collaborative, research and industry engagement.

As Curtin heads towards 2020, we will position ourselves as a leading GLOBAL university, ensuring that we:

Strengthen our capacity to be future looking;

Maintain a focus on excellence in everything we do;

Strive to be both industry-facing and industry-embedded;

Deepen our well-established culture of innovation;

Build life-long connections with an engaged alumni;

Above all, be led by our values as we support our staff, promote Indigenous reconciliation and contribute to a fairer and more just society for all.

MISSION

Transform lives and communities through education and research.

2030 VISION

A recognised global leader in research, education and engagement.

CURTIN VALUES

Building on a foundation of integrity and respect, and through courage, we will achieve excellence and have an impact on the communities we serve.

2020 POSITIONING

Secure our position as a leading global university; in the top 200 globally and the top 10 nationally.

FACULTY OF SCIENCE AND ENGINEERING 2025 STRATEGIC POSITIONING

Recognised as a global leader for the excellence of our teaching, research, student experience and the quality of our graduates

By 2025, recognition of the quality of its learning and student experience will ensure that the Faculty is the choice of future students, and is respected for its excellence in teaching, research and industry engagement and for its focus on social responsibility. Students will have access to a sophisticated global learning environment that will include international mobility as well as global connectivity through state-of-the-art learning spaces. We will continue to build programs that attract high-achieving Science and Engineering students and develop flexible entry pathways through articulation with the VET sector. We will respond to industry and community needs for postgraduate courses, short-form credentials and continuing professional development programs that provide flexible, life-long learning opportunities.

Ranked highly in Australia and globally for our research, we will be recognised for a culture of innovation, entrepreneurship and commercialisation. Building on our distinct discipline strengths, we will engage in transformative cross-disciplinary collaborations to cater for emerging needs. We will continue to grow our higher degree program in key areas of research strength to develop the next generation of researchers.

The Faculty will increase the scale and depth of its partnerships, being recognised as a partner of choice by government, industry and community. We will embed industry-connectedness across teaching and research. Our graduates will continue to be recognised as career-ready employees with excellent leadership and discipline-specific skills.

The Faculty's teaching and research capabilities at Curtin's international campuses and partners will be a core element of its global network of education and research.

Our staff will be part of collegial and high-performing teams with a shared sense of purpose. We will be known as an employer of choice for top academic and professional staff and respected for our diversity.

We will maintain financial sustainability through diverse revenue streams, increased philanthropic support and rigorous assessment of risks and opportunities. We will have a financially sustainable research strategy and leverage new investments to deliver world-class teaching and research.

We will actively engage with our alumni to enhance our activities in teaching and research.

As we progress towards 2025 we will ensure that we:

- Lead in curriculum innovation and cultivate a distinctive student experience with a focus on career-readiness and global citizenship.
- Build on our international reputation and discipline strengths to participate in high-impact and cross-disciplinary research.
- Be recognised as partner of choice by industry, government and our local and international communities.
- Celebrate our staff achievements and develop a shared sense of purpose and destination across Perth and Kalgoorlie campuses.
- Develop a culture that promotes One Curtin through building teaching and research partnerships that includes international staff and student mobility.
- Ensure an adequate rate-of-return on our investments while ensuring our academic mission for world-class teaching and research.





LEARNING AND STUDENT EXPERIENCE

OBJECTIVES AND INITIATIVES

Lead in curriculum innovation with a focus on research capability, career-readiness and global citizenship

1. Create a learning and teaching leadership group to encourage innovation, iSOLT and the sharing of curriculum development practice (e.g., expanding the renewal of the Mining Engineering programme to other programmes).
2. Seek efficiencies through cross-campus delivery, inter-School and inter-Faculty collaboration in multi-disciplinary teaching, and e-learning opportunities.
3. Embed Work Integrated Learning (WIL) throughout our courses using traditional and innovative models of WIL (micro-placements, online placements, hackathons/competitions/events, incubators, consulting).
4. Develop a career planning program for first year students.

Grow undergraduate and postgraduate student enrolments both onshore and offshore

1. Develop a suite of postgraduate courses with flexibility to respond rapidly to markets and new opportunities.
2. Develop a set of short-form credentials, including stackable credentials to enable flexible postgraduate courses.
3. Maintain commitment to attract high-achieving students through innovative course design.
4. Promote undergraduate and postgraduate courses through targeted marketing and events.

Cultivate a distinctive student experience centred on student agency, student partnerships, leadership and social responsibility

1. Develop an outstanding student experience that focuses on improving retention, pass rates and student outcomes (including support for students to improve retention rates (e.g., English language support).
2. Develop a culture of "students as partners" to ensure the student voice is included in decision making.

3. Expand the co-curricular program to allow opportunities for development of leadership and social awareness particularly through Curtin Extra programs.
4. Develop a 25 credit-point unit for community service as an option in our courses.

Increase industry and community engagement in our courses

1. Seek more active industry involvement in presenting significant project-based portions of units.
2. Engage industry Advisory Boards and other key stakeholders across all teaching areas to keep pace with industry trends and partner with industry in curriculum development.
3. Increase development of Indigenous perspectives throughout our courses through engagement of First Peoples in course design and delivery.

Leverage a growing culture of collaboration and best practice to foster teaching excellence with recognition and reward

1. Develop course reflection teams in which all teaching staff actively participate and share best practice.
2. Promote peer learning and collaboration through the Peer Review of Educational Practice (PREP).
3. Ensure that teaching is informed by the student voice through teaching, unit and course evaluation mechanisms.
4. Develop a Faculty-wide collaborative community for best practice teaching.

Increase the participation of Indigenous and other student equity groups in our courses

1. Building on our current success (e.g., Indigenous Summer School, Women in Mining), expand and engage outreach and mentorship activities with key community and industry groups (e.g., targeted School engagement program).
2. With Centre for Aboriginal Studies (CAS), plan for successful transition from the Indigenous pre-science-engineering course.
3. Enhance promotion of Indigenous STEM scholarships.

STRATEGIC OBJECTIVES

Lead in curriculum innovation with a focus on research capability, career-readiness and global citizenship.

Grow undergraduate and postgraduate student enrolments both onshore and offshore.

Cultivate a distinctive student experience centred on student agency, student partnerships, leadership and social responsibility.

Increase industry and community engagement in our courses.

Leverage a growing culture of collaboration and best practice to foster teaching excellence with recognition and reward.

Increase the participation of Indigenous and other student equity groups in our courses.



RESEARCH AND INNOVATION

OBJECTIVES AND INITIATIVES

Identify and be recognised as a global leader in our areas of existing and emerging research strengths.

1. Continually review the Faculty's research areas to identify existing and emerging areas of research strength, guiding prioritization of research support and ensuring growth in research reputation.
2. Ensure that the Faculty's research strategy is aligned with the overall research strategy of the University.
3. Invest in highly ranked research areas together with those which are able to rise rapidly in rankings schemes and influence overall University ranking.
4. Continuously improve the quality of research outputs through an emphasis on publication quality in the Career Conversations (CC) and benchmarking citation performance against Australian and global discipline specific citation norms.
5. Initiate a Faculty incentive scheme that expands upon the Research Office at Curtin (ROC) scheme to include other high impact outputs e.g high impact discipline specific papers determined by Head of School (HoS,) commissioned reports, patent, developing a collaboration with a demonstrated output that enhances the reputation of Curtin University relevant to research areas of strength and emerging areas.
6. Increase the research profile and build the professional standing of staff and Higher Degree by Research (HDR) candidates within the Faculty, e.g., creating an ORCID ID, writing an academic profile, using platforms such as Google Scholar, Research Gate, etc.

Build and diversify research income

1. Support the continuous improvement in the quality of expressions of interest and applications for major grant schemes including developing dedicated teams to prepare staff for DECRA and Future Fellowship schemes.
2. Leverage Faculty strengths to engage with industry partners and other University partners to form integrative research teams.

3. Develop multi-disciplinary teams to identify and solve complex research problems for the government, community and industry.
4. Prioritise Faculty resources and investment into areas which are able to use infrastructure to generate additional income streams.

Recruit and grow high-quality domestic and international HDR student enrolments aligned with our existing and emerging research strengths

1. Increase the number of HDR students entering the HDR program from leading International Universities.
2. Supervisor track record should become part of the consideration as to where scholarships are best invested.
3. Monitor student progress through the Milestones process to increase timely completions.
4. Use data generated from Graduate Research School (GRS) to monitor and encourage participation of supervisors and students in GRS activities.
5. Enhance the knowledge and skills of HDR candidates through the promotion and application of innovative practices in training and development as part of each research experience e.g., engagement with industry, opportunities for professional development, ability to publish research.

Building on our distinctive discipline strengths, participate in cross-disciplinary research within Curtin and more widely

1. Develop multidisciplinary themes and promote research between core disciplines and these multidisciplinary themes.
2. Promote greater multidisciplinary research, including industry involvement, by allocating strategic funding for multidisciplinary projects.
3. Enable networking opportunities for staff to meet and communicate with potential collaborators within Curtin.
4. Work collaboratively with University staff to breakdown internal Faculty and University barriers to interdisciplinary research.

STRATEGIC OBJECTIVES

Identify and be recognised as a global leader in our areas of existing and emerging research strengths.

Build and diversify research income.

Recruit and grow high quality domestic and international HDR student enrolments aligned with our existing and emerging research strengths.

Building on our distinctive discipline strengths, participate in cross-disciplinary research within Curtin and more widely.



ENGAGEMENT AND IMPACT

OBJECTIVES AND INITIATIVES

Develop and grow commercialisation opportunities

1. Develop an External Engagement Plan for the Faculty (including government, industry, communities in all locations where the Faculty has a presence) and work with the HoS to implement and execute the plan.
2. Work with ROC to grow staff and HDR student understanding of innovation and commercialisation opportunities.
3. Identify commercialisation opportunities for research projects from staff through the usual Australian Research Council (ARC) Linkage projects or the data bank on staff disclosures to ROC.
4. Prepare a Continuing Professional Development (CPD) plan across the Faculty for the next 3 years. Ensure implementation and delivery both for Perth and regional campuses, and overseas markets.
5. Leverage research engagement opportunities from CPD program attendees/delegates and sponsoring companies.

Grow alumni engagement at all campuses and embed a culture of philanthropy across Schools

1. Work with the Alumni Office and Director of the Kalgoorlie campus to identify the active alumni groups/ clusters building on the success of the WA School of Mines Alumni Association (WASMAA).
2. Identify philanthropic priorities and identify major gift funding opportunities for Science & Engineering that align with the University's overall philanthropic framework.
3. Promote the fundraising priorities and needs of the Faculty, both internally and externally.
4. Build and maintain a pipeline of trackable, prospective Faculty donors.
5. Engage with alumni chapters at our offshore campuses when Faculty staff visit the campus.

Ensure the impact of our research activities is understood and can be evaluated

1. Create a mechanism to track graduate and research impacts (especially for ERA submissions) with robust record keeping.
2. Identify and promote the Faculty relevant metrics from the Curtin Academic Capability Framework which will incentivise delivery of impact.

Enhance our industry connectedness and community engagement

1. Grow community engagements in Kalgoorlie through School-based activities in partnership with the Director, Kalgoorlie and WASMAA.
2. Grow community engagement with our regional campuses where the Faculty has a presence, including Muresk and the Geraldton and Pilbara Universities Centres.
3. Ensure Advisory Boards are fully engaged with curriculum development and research strategy development in all Schools.
4. Grow philanthropic income.

Enhance the Faculty's reputation in the broader community

1. Strengthen the Faculty's STEM outreach activities as a pipeline to grow domestic student enrolments.
2. Ensure that each School has an Advisory Board with diverse representation from various stakeholder communities.
3. Engage with student groups and clubs to support outreach activities.

Enhance the Faculty's contributions to Curtin's Reconciliation Action Plan

1. Recruit academic and professional staff in the Faculty who identify as being Indigenous.
2. Attract students in the Faculty who identify as being Indigenous.
3. The Faculty to provide a senior representative to the Indigenous Leadership Group.
4. Promote Indigenous representation on the Faculty Advisory Council and School/Institute/Centre Advisory Boards.

STRATEGIC OBJECTIVES

Develop and grow commercialisation opportunities.

Grow alumni engagement at all campuses and embed a culture of philanthropy across Schools.

Ensure the impact of our activities is understood and can be evaluated.

Enhance our industry connectedness and community engagement.

Enhance the Faculty's reputation in the broader community.

Enhance the Faculty's contributions to Curtin's Reconciliation Action Plan.



PEOPLE AND CULTURE

OBJECTIVES AND INITIATIVES

Develop a shared sense of purpose and vision across the Faculty

1. Create a communication plan and strategy at the Faculty and Schools to improve communication across all levels of the Faculty.
2. Foster closer relationships with Deans, Directors and HoS to enhance communication and mutual understanding.
3. Ensure that staff at our Kalgoorlie campus are provided with opportunities to fully engage with Faculty initiatives.

Improve and promote recognition and reward for staff achievement

1. Utilising the new ACF and CC ensure that recruitment, development and promotion processes adequately recognise and reward leadership, innovation, impact, engagement and collaboration.
2. Align the PVC Awards to the Faculty's Strategic Objectives, including for teaching excellence, research achievements and engagement.
3. Better promote and increase participation in the nomination process for the annual Faculty award ceremony.
4. In addition to the annual Faculty awards, develop additional recognition of staff at the School level throughout the year: Recognition for Innovation Champions, staff collegiality, values-leadership as well as excellence in teaching, research, engagement and impact and other areas of outstanding achievement.
5. Ensure that staff are appropriately mentored at all stages of their careers.

Ensure we have the workforce for the future

1. Undertake Strategic Workforce Planning in each School to ensure that we have the workforce for the future.
2. As part of Strategic Workforce Planning, create a Succession and Development plan to ensure career development needs are tracked and managed.
3. While recognising budget constraints, create a positive message about our workforce for the future.
4. Focus on excellence utilising the new Academic Capability Framework.
5. As part of the annual Career Conversations, encourage forward looking-looking, career development dialogue and set clear expectations for performance.

6. Provide career development opportunities for all staff, including fixed-term staff to enhance future employability when they leave Curtin.

Strengthen a culture of diversity and inclusivity

1. Every School to have a diversity plan and work group to progress it.
2. Ensure every School has a plan for achieving Athena Swan bronze accreditation.
3. Ensure that all staff across the Faculty play an active role in strengthening a culture of diversity and inclusivity.
4. Building on our success with the Indigenous Summer School, Engineering Aid Australia and Women in Mining, expand and engage outreach and mentorship activities with key community and industry groups.
5. Explore opportunities for the Faculty to engage with the Nowanup Bush Campus (e.g., learning about ecology in an indigenous context).
6. Ensure that Faculty staff engage with Ways of Working.

A culture of health and safety is embraced by all

1. Establishment of Science/ Engineering Health and Safety Committees.
2. Monitoring and report Health and Safety training across the Faculty.
3. Workplace inspections are completed in line with University procedures.
4. Ensure that required training in Occupational Health and Safety is undertaken in a timely manner.

Focus on employee wellness to connect to all important areas of health

1. Implement a regular survey to understand key areas of concern for staff relevant to their physical and mental well-being.
2. Develop a wellness program for the Faculty, drawing upon existing resources where available that address dimensions of staff concern.
3. Ensure managers are educated and equipped to encourage staff to participate in wellness activities and initiatives through the wellness program. In addition ensure that managers are trained and educated to deal with any people related wellness issues (physical, mental, social and financial).

STRATEGIC OBJECTIVES

Develop a shared sense of purpose and vision across the Faculty.

Improve and promote recognition and reward for staff achievement.

Ensure we have the workforce of the future.

Strengthen a culture of diversity and inclusivity.

A culture of health and safety is embraced by all

Focus on employee wellness to connect to all important areas of health



GLOBAL POSITIONING

OBJECTIVES AND INITIATIVES

Enhance our academic reputation globally

1. Develop a global positioning strategy aligned with areas of teaching and research focus benchmarking discipline areas with national and international rankings data.
2. Grow our academic reputation through strategic global alliances with leading institutions and academic networks.
3. Identify and promote new and emerging research international partnership opportunities.
4. Enhance global academic networks through high-quality inbound and outbound academic exchanges.

Grow international demand for our courses

1. Identify areas of international demand for our courses and build marketing materials for offshore recruitment activities.
2. Build International load through expansion of undergraduate and/or postgraduate Academic Articulation Agreements (AAA)
3. Develop and expand AAAs with key partner institutions in South Asia, China and Association of South East Asian Nations (ASEAN).
4. Develop and market new postgraduate coursework areas in our priority markets (e.g., 2 year Master of Professional Engineering and Master of Advanced Engineering).

Enhance our relationships with global top-tier partners

1. Strengthen and grow Trans-National Education (TNE) partnerships through new course offerings and joint degree programs with offshore partners and global campuses.
2. Support University strategy to develop research and teaching capacity at offshore campuses.
3. Enhance industry and professional organisation partnerships through CPD, stackable units and micro- credentials.
4. Fast track and expand selective hosted and innovative programs aligned to niche areas of specialisation for international students through postgraduate coursework and offshore masters programs.

Develop a culture that promotes One Curtin

1. Develop international research capacity and capability in key research areas through the development of project hubs and offshore campuses.
2. Expand international joint programs aligned with One Curtin approach for staff development, collaborative teaching, cross-campus feedback and consultation.
3. Increase outbound global mobility activities e.g., student participation in the Miri 300 project; New Colombo Plan (NCP) initiatives.
4. Supplement approved staff travel with an extra day of travel to engage in global positioning activities.

STRATEGIC OBJECTIVES

Enhance our academic reputation globally.

Grow international demand for our courses.

Enhance our relationships with global top-tier partners.

Develop a culture that promotes One Curtin.



SUSTAINABLE FUTURE

OBJECTIVES AND INITIATIVES

Develop financially sustainable research

1. Develop a plan for the future research landscape and research funding model which ensures strategic and transparent use of Faculty resources.
2. Complete a review and establish the full cost of current research activities.
3. Undertake scenario planning and risk -opportunity assessment to establish a Faculty research focus which balances financial sustainability and reputational gain/league table positioning.
4. Continually review areas of research focus and investment, and ensure investment can be allocated to new and emerging areas.

Develop new sources of income

1. Develop opportunities for CPD and short courses in Perth, Kalgoorlie and overseas markets.
2. Ensure new and existing courses are optimised for priority markets.
3. Target international markets with strong potential for onshore students.
4. Enable demand-driven research and engage with industry to lead in developing opportunities for mutually beneficial research.
5. Encourage entrepreneurship and facilitate academic involvement in commercialisation and IP generation opportunities.

Engage with external partners to leverage new investments to deliver world-class teaching and research

1. Work with ROC to identify new, and nurture existing, industrial partners to leverage investments aligned to the Faculty's research strategy.
2. Identify and nurture key external partners providing opportunities for postgraduate and professional training.

Ensure return on investment from all our activities, new and existing, is optimised and consistent with our academic mission for world-class teaching and research

1. Potential new investments are aligned to strategy and have a strong business case that ensures return on investment
2. Identify and transition out of activities that are no longer sustainable and have no long-term strategic significance.


STRATEGIC OBJECTIVES

Develop financially sustainable research.

Develop new and diverse sources of income.

Engage with external partners to leverage new investments to deliver world-class teaching and research.

Ensure the financial return for all our activities, new and existing, is optimised, and consistent with our academic mission for world-class teaching and research.



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