Realising our University for Industry Vision

At SIT, industry is not a stakeholder; it is the cornerstone. As Singapore's University for Industry, SIT collaborates closely with sector leaders to align education with evolving workforce needs. This integrated approach shapes our curriculum, fuels applied research, strengthens workforce training, and drives global readiness.

From empowering students through structured career development, co-developing Continuing Education and Training (CET) programmes, to collaborating on applied research that drives innovation, SIT is committed to nurturing a resilient, adaptable, and skilled talent pipeline that supports national priorities and economic transformation.

Partnerships

In FY2024, SIT deepened and expanded its strategic partnerships with industry and government agencies to strengthen its applied learning and research ecosystem. These collaborations played a critical role in enhancing students' authentic learning experiences, fostering innovation, and addressing real-world challenges across key sectors.

SIT signed **32 new Memoranda of Understanding (MOUs)** with leading public agencies, global corporations, and innovation-driven organisations.

These partnerships span key areas including:

- Applied Research & Innovation
- Curriculum Co-Development (PET & CET)
- IWSP
- Academic & Staff Exchanges
- Community Engagement & Sustainability
- Workforce Transformation & Talent Development

Notable MOU signings include:

- **Republic of Singapore Navy:** Collaboration on course development, student sponsorships, and co-hosting of symposia and conferences.

Photo: LCP Lucius Tan

- **Maritime Port Authority of Singapore, Singapore University of Technology and Design, and Singapore Shipping Association:** Joint efforts to build a resilient maritime cybersecurity ecosystem through training, talent development, and applied learning.

- **Seatrium Pte Ltd:** Establishment of a joint Offshore and Marine Digital Learning Lab for research in microgrids, 5G maritime use cases, and digital twin simulation for yard operations.

Photo: Seatrium Limited

- **Applied Materials and A*STAR:** Collaboration under the new Equipment and Process Innovation and Commercialisation Centre in Advanced Packaging, focusing on power electronics, mmWave, photonics, and new materials R&D.

Photo: Applied Materials

- **STMicroelectronics:** A renewed partnership to strengthen the semiconductor talent pipeline and establish a **Process Safety Living Lab**, focusing on process safety best practices and innovation.

- **Hyundai Motor Group Innovation Centre Singapore (HMGICS):** Donation of an IONIQ 5 to support applied research and training in EV technology and solutions. An MOU was signed to facilitate staff development, student attachments, and creation of CET courses.

Photo: Hyundai Motor Group Innovation Center Singapore

Living Labs

Living Labs at SIT serve as vibrant integrated platforms where academia and industry converge to provide hands-on, collaborative learning environments. Students are able to engage in authentic learning experiences and problem-solving opportunities through the real-world systems in these labs. In FY2024, two new living labs were set up with our key partners:

SBS Transit-SIT Living Lab: Beyond supporting real-world problem-solving for SBS Transit in addressing operational and engineering challenges and innovation in public transport, the public spaces at Punggol Coast MRT – such as the amphitheatre – will be activated as placemaking venues. These spaces, when ready, will host student-led performances, STEM and sustainability workshops, and social innovation showcases.

Army-SIT Systems Engineering and Technology (ASSET) Living Lab: Since 2024, SIT and the Singapore Army have embarked on a strategic collaboration to advance SIT's applied learning approach and strengthen the Army's engineering capabilities through the ASSET Living Lab initiative. This collaboration provides SIT students access to an authentic learning environment, where they participate in real-world Army projects through their final-year capstone or IWSP. Spanning areas such as Advanced Manufacturing, Power and Energy, Reliability-Centred Maintenance, and Robotics and Unmanned Ground Vehicles, SIT students can gain practical exposure while contributing to Singapore's national defence. In addition, the partnership supports workforce development by aligning the Army's training needs with SIT's offerings, including micro-credentials, competency-based stackable degrees and postgraduate certifications.

Lifelong Learning & Sector Capability Building

SIT*LEARN*, SIT's lifelong learning division, plays an important role in scaling capability development across Singapore's industries. Working with leading organisations and industry partners, SIT*LEARN* co-develops modular, stackable, and industry-relevant programmes that support upskilling, reskilling, and professional growth.

In the past year, SIT*LEARN*:

- Forged new partnerships with Pacific International Lines (PIL), Singapore Pools, and the Sustainable Energy Association of Singapore (SEAS), strengthening our reach into the maritime, social services, and sustainability sectors.
- Deepened existing collaborations with SMRT, through the Queen Bee 2.0 initiative, and with SingHealth institutions, resulting in new CET offerings and applied learning opportunities.
- Launched new degree and micro-credential programmes, developed in consultation with industry, to build sector-specific competencies.
- Ensured professionals remain relevant by embedding applied learning into continuing education.

Milestones in CET offerings through the years

2016 Our first CET course on Design Experience Design Studio was held at Lifelong Learning Institute

2017 Launched Process Safety workshops, which are now adopted by 100+ companies

2018 Partnered with PSA Singapore to develop future-ready logistics talent for the automated port

2019 Trained national cyber defenders with then MINDEFC4I, now known as the Digital Intelligence Service

2020 Rolled out allied health programmes to support the needs of the ageing population

2021 Introduced SkillsFuture-aligned courses and certifications such as One Rehab Framework to 3,000 healthcare professionals

2022 Launched workplace learning via NACE@SIT; partnered with SMRT and SMEs to drive productivity

2023 Launched Competency-based Micro-credential pathways with SingTel, NCS, Singapore Armed Forces and Singapore Navy for modular, flexible upskilling

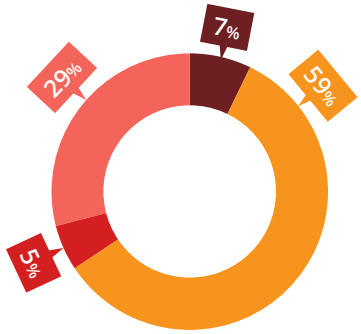
2024 Expanded executive education in AI, EVs, decarbonisation, data centres & innovation leadership; launched Master of Health Sciences with five specialisations

Applied Research

SIT's applied research acts as a catalyst for industry innovation, translating knowledge into real-world solutions that empower partners and strengthen Singapore's economic resilience. The University's research funding has grown steadily over the past three years.

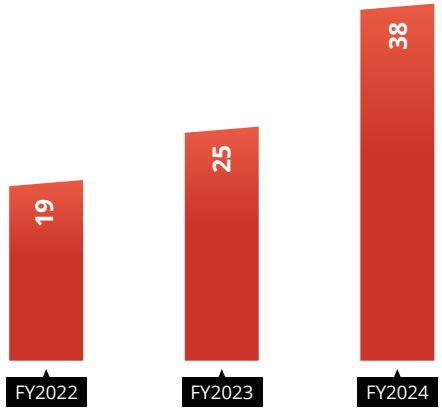
In FY2024, industry cash and in-kind contributions more than doubled compared to FY2023, reflecting increasing confidence in SIT as a partner of choice for applied research.

Cumulative Research Grants and Industry Contributions FY22 – FY24*



- **Internal Grant: $9.1M** — FY22: $1.8M, FY23: $3.6M, FY24: $3.8M
- **External Grant: $74.2M** — FY22: $8.8M, FY23: $32.0M, FY24: $33.4M
- **Industry Contribution (Cash): $6.3M** — FY22: $1.7M, FY23: $1.2M, FY24: $3.4M
- **Industry Contribution (In-Kind): $36.7M** — FY22: $6.5M, FY23: $8.5M, FY24: $21.7M

Number of Industry Funded Projects FY22 – FY24*



*As of 31 March 2025

Translating Knowledge into Real-World Impact

Applied research remains central to our mission – anchoring industry-relevant education, cultivating innovation-ready talent, and enabling impactful partnerships. Our translational research approach bridges academic discovery and practical application, empowering us to co-develop scalable solutions that address national and industry challenges.

With enhanced lab infrastructure, collaborative spaces, and proximity to the Punggol Digital District, SIT is poised to deepen our research impact and serve as a testbed for innovation across key sectors.

Decarbonising Maritime Operations

SIT Photo

SIT leads the Future Ship and System Design (FSSD) Programme, a five-year initiative supported by the MPA to accelerate the decarbonisation of harbour craft through electrification. The FSSD Laboratory, launched in March 2025, supports propulsion and battery systems research by simulating real-world shipboard operations.

In partnership with over 30 industry collaborators and academic institutions, SIT is co-developing solutions to reduce maritime emissions and improve vessel efficiency. The programme aims to train over 100 researchers, engineers, and students, strengthening the talent pipeline for Singapore's maritime sector.

Turning CO_2 into High-Value Chemicals

SIT received its first National Research Foundation Competitive Research Programme (CRP) grant for an electro-biocatalytic project that aims to convert carbon dioxide (CO_2) into high-value chemicals using renewable energy. This four-year initiative seeks to develop a new, sustainable process to produce aromatic compounds – key building blocks in industries such as pharmaceuticals and plastics, while overcoming critical technical barriers to scale-up.

Low-Carbon Solutions for Construction

The Construction Technology Innovation Laboratory (CTIL) continues to deliver innovations that are aligned with Singapore's Green Building Masterplan. CTIL's development of aqueous carbon sequestration technology for ultra-low-carbon concrete earned the IES Prestigious Engineering Achievement Award 2024.

Photo: Construction Technology Innovation Laboratory

Trialled in residential developments, the concrete is now being scaled for use in a new shopping mall in collaboration with City Developments Limited. The goal is to reduce construction emissions by over 40%, setting a new benchmark in green construction.

CTIL also introduced a novel welding protocol for S690 high-strength steel kingposts — the vertical structural supports that transfer loads from temporary structures to the foundation during construction — marking a first in Singapore's construction history. These kingposts reduce steel tonnage by 40% without compromising structural integrity, enabling material efficiency and cost savings. The solution has been adopted in projects such as Fuji Xerox Towers Redevelopment and Marina View Residences.

Smarter Foundations, Lower Emissions

SIT researchers received Building and Construction Authority's approval for a new Drilled Displacement (DD) pile technique. Compared to traditional bored piling, DD piles are expected to reduce concrete usage by 36%, increase load capacity by 34%, and improve productivity by 75%. The technique was successfully deployed at a Tuas site and recognised with the Singapore Concrete Institute's Excellence Award 2023 and SIT's Applied Research Excellence Award 2025.

Affordable Water Solutions for Developing Regions

SIT Photo: Keng Photography

In collaboration with local enterprise Atera Water, SIT researchers co-developed a gravity-driven membrane filtration system to replace chemical-heavy water treatment methods in high-turbidity environments. Designed for cost-effective deployment in developing regions, the system is now being commercialised in a Southeast Asian country.

This innovation was mentioned by President Tharman Shanmugaratnam at the Lee Kuan Yew Water Prize 2024 award ceremony, reinforcing SIT's role in advancing sustainable water technologies with real-world impact.

Supporting Healthier Ageing through Nutrition

The DIGNIFIED (*Delicious, Integrative, Good Nutrition and Fulfilment In Elderly Diet*) Programme, supported by the Industry Alignment Fund–Pre-positioning Programme (IAF-PP), tackles nutritional gaps for Singapore's ageing population. Combining expertise in food science, nutrition, gerontology and culinary technology, the programme develops elderly-friendly meals that are both functional and appealing.

SIT researchers work with food manufacturers and healthcare providers to deliver solutions that promote healthy ageing and independent living, while addressing an underserved market need.

Healthier Lives for Seniors

SIT researchers developed "Say No to Frailty", a 12-week intervention programme that has improved mobility and independence among seniors. In one case, a participant who was previously unable to stand unaided regained his ability to perform daily tasks and re-engage with his community.

Photo: Blossom Seeds Active Ageing Centre

The programme has been endorsed by the Ministry of Health and Agency for Integrated Care, and licensed to seven senior care centres. Plans are underway to expand to 30 Active Ageing Centres in the next two years, demonstrating SIT's commitment to community-focused research with scalable health outcomes.

Accelerating AI Innovation with NVIDIA

SIT Photo: Keng Photography

SIT partnered with NVIDIA to launch an AI Centre in 2024, dedicated to driving AI adoption across industries and strengthening Singapore's AI talent pipeline. The Centre collaborates with over 40 companies through joint research projects and supports the training of nearly 100 undergraduate and postgraduate students.

A notable project – AIDISA (*AI System for Intelligent Situation Awareness from Heterogeneous Commuter Feedback*) – was developed to improve Singapore's public transport systems. By analysing commuter feedback in real time across multiple platforms, the system enables faster issue detection and automated response, enhancing overall commuter experience and operational efficiency.