

# Applied Learning

SIT's unique pedagogy bridges learning and work, with an emphasis on experiential learning based on real-world problems. The University's degree programmes are designed to deepen skill mastery, with interdisciplinary and transferable skills integrated into the curriculum. We aim to develop work- and future-ready, lifelong learning professionals who are catalysts in industry transformation.

## TRANSFORMING LEARNERS THROUGH NEW ACADEMIC INITIATIVES

### INNOVATIVE EDUCATION PATHWAYS

SIT has introduced innovative education pathways such as **Term-In Term-Out (TITO)**, which maximise the curriculum time the students spend at job attachments. Students alternate between classes and on-the-job training, and at the end of their undergraduate studies, they would have spent almost half of their school term in authentic industry settings without extending the duration of their degree programme.

The TITO model enables students to gain a deeper understanding of industry needs and bring these perspectives back to the classroom. Concurrently, sponsoring companies will be able to green-harvest talents. In FY2022, the University secured the commitment of 15 companies for 3 degree programmes in Applied Computing (with Fintech specialisation), Digital Supply Chain, and Robotics Systems. These companies will provide work placements for students throughout the course of study.



### NEW UNIVERSITY-LEVEL MODULES FOR INTERDISCIPLINARY LEARNING

In AY2022, SIT completed the harmonisation of degree programmes with the rollout of 5 university-level modules under its Undergraduate Programme Structure that emphasise dispositions like curiosity, creativity, critical thinking, communication and collaboration. These modules prepare students for life beyond the classroom by providing them with the skills to navigate the increasingly volatile, uncertain, complex, and ambiguous (VUCA) world.

- The **Critical Thinking and Communication** module teaches students essential skills to evaluate texts and propose innovative ideas specific to their degree programmes. Students will acquire foundational knowledge in writing and speaking through training in critical reading, literature reviews, effective report writing and presentation skills.
- In the **Digital Competency Essentials** module, students will complete a series of stackable micro-modules that will equip them with basic digital

skills and competencies aligned with the Ministry of Education's digital literacy framework. These skills include cybersecurity, cloud computing and data analytics.

- The **Introduction to Design Innovation and Interdisciplinary Design Innovation** modules train students to innovate using a multi-disciplinary approach focused on user-centred problems. Through empathic discovery and iterative solutioning, students are equipped with the critical competency and confidence to approach complex problems and develop creative solutions.
- Under the **Social Innovation Project (SIP)** module, students will identify and address contemporary social, environmental and sustainability factors. SIP enhances students' learning and develops them into effective, inclusive and socially attuned individuals. There will be opportunities for them to formulate social innovations or solutions that can address a variety of challenges, such as those related to sustainability and sustainable development, or the management of disruptions and impact on seniors.

## REFRESHED CURRICULA TO NURTURE STEWARDS OF SUSTAINABILITY

SIT recognises its role in building capability for sustainability efforts and has announced the following refreshed curricula:

Introduced in AY2022, all Year 1 undergraduates from SIT and SIT-joint degree programmes will receive a baseline sustainability education through a compulsory **Introduction to Sustainability micro-module** that equips students



with the fundamentals of sustainable development. The micro-module also supports future sustainability-related modules and projects.

In AY2023, a new **Minor in Environmental Sustainability** will be available for undergraduates of selected programmes, such as the Electrical Power Engineering degree programme.

2 degree programmes will have their names changed to better reflect their curricula, with effect from AY2023:

- Bachelor of Engineering with Honours in Sustainable Infrastructure Engineering (Building Services) has been renamed **Bachelor of Engineering with Honours in Sustainable Built Environment**;
- Bachelor of Engineering with Honours in Sustainable Infrastructure Engineering (Land) has been renamed **Bachelor of Engineering with Honours in Engineering Systems**.

## ESTABLISHING LIVING LABS AS A STRATEGIC ACADEMIC IMPERATIVE



In addition to pathways and programmes, SIT is transforming learning through Living Labs, which play a key role in enabling authentic and active learning for students, and supporting the nurturing of talents to

contribute to industry advancements and innovation. Living Labs also emphasise interdisciplinary collaboration, encouraging the exchange of ideas and knowledge across different fields. Ultimately, the initiative aims to bridge the gap between academia and industry to accelerate the translation of research into practical applications that benefit society.

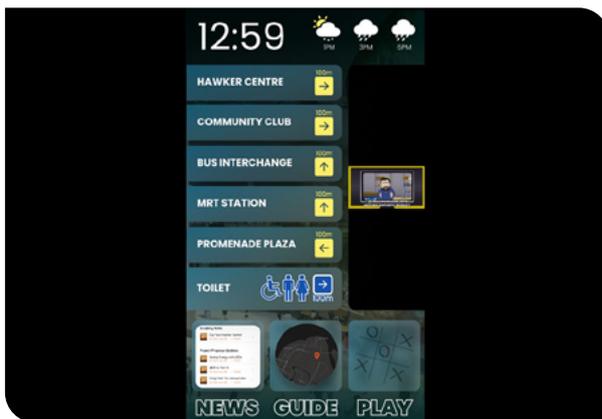
For a start, the University has set up 5 Living Labs in the areas of **Energy, Transport, Healthcare, Building Services and Virtual Campus**. SIT students and researchers can tackle real-life projects such as the Multi-Energy Microgrid (MEMG) and the District Cooling System (DCS) implementations. In FY2022, the University extended its partnerships with **SingHealth** and **SMRT** to drive strategic initiatives through new research and innovation opportunities and practice-oriented education for students. Through Living Labs, SIT brings greater authenticity to its educational offerings and catalyses applied research opportunities for SIT students and faculty, all while contributing to and solving operational challenges with our partners.

## FOSTERING LEARNING AND INNOVATION THROUGH EXPERIENTIAL CHALLENGES

FY2022 was an exciting year for SIT students as they participated in a variety of competitions and hackathons, providing them with enriching, hands-on opportunities to apply their knowledge and showcase their skills.

In August 2022, SIT collaborated with the Cyber Security Agency of Singapore (CSA), the Association of Information Security Professionals (AiSP), Group-IB and JTC to organise the **PDD Connecting Smartness Bug Bounty 2.0 Contest**. Held at the SIT@NYP Building, the event challenged cybersecurity experts to find bugs and vulnerabilities in real-world systems, such as the Living Lab Network prototype. The winner, Year 3 ICT (Information Security) student Justin Lim Keat Hui, was able to bypass the authorisation of a network router and expose its technical information. This open innovation ecosystem serves as a Living Lab for industry partners to test and pilot their prototypes in a real-world setting.

SIT and Target Media Culcreative collaborated on the **'Beyond the Screen Ideation Challenge'** for students and Punggol residents. The challenge aimed to enhance community communications and engagements by harnessing technology, content creation, the environment and ecosystem, and other disruptive strategies. The winning entry by Year 1 student Kieran Chai Si Yuan, from DigiPen Institute of Technology (Singapore)'s User Experience and Game Design programme, featured a smart and interactive repository comprising a directory of nearby amenities, wayfinding, weather forecasts and community news.



The winning entry of the 'Beyond the Screen Ideation Challenge' by an SIT student featured a smart directory and an interactive repository.

The **Tech For Good 2022** innovation festival by Engineering Good provided SITizens opportunities to collaborate and tackle community issues. 3 teams from the Engineering and Infocomm Technology Clusters made the finals, where they showcased their assistive technology ideas, including an Internet-of-Things device that assists people with muscular dystrophy with photo-taking, a modified ramp for an enhanced game of bowling, and an automated

spam detection programme. The event was co-organised by SIT's Community Leadership and Social Innovation Centre (CLASIC).

Mapletree Investments Pte Ltd and SIT partnered on the third edition of **The Mapletree Challenge 2022**. The challenge, comprising masterclass sessions and an innovation and entrepreneurship forum, culminated in a grand finale that saw 2 SIT student teams emerging as joint champions.



The second bug bounty challenge was a resounding success.



The top 3 teams of The Mapletree Challenge 2022 with MOS Low Yen Ling and senior management of SIT and Mapletree.



SIT Senior Management and faculty with SIT participants at the Tech For Good 2022 innovation festival.

## FORGING BONDS AND EXTENDING NETWORKS BEYOND CAMPUS AND BORDERS

In FY2022, SIT resumed most of its mobility programmes to offer students international exposure through cross-cultural exchanges. The University also facilitated enriching networking opportunities and activities for students.

A total of 735 students participated in various **Overseas Immersion Programme (OIP)** activities, including industry visits, projects and lectures.

In May 2022, SIT students and faculty collaborated with the Metropolia University of Applied Sciences in Finland

on the '**Artificial Intelligence (AI) Based Solutions in Dose Management**' project, a cross-university partnership focused on reviewing research on AI applications to dose management in medical radiation imaging and radiation treatment. This multidisciplinary project was funded by the Finnish Education Ministry. A 5-year Memorandum of Understanding (MOU) was signed in October 2022 to extend further student and staff exchanges, joint workshops and applied research opportunities.



University of Glasgow Singapore students enjoyed a campus tour of the UofG campus in Scotland.



The Culinary Institute of America students at Greystone campus in USA.



DigiPen (Singapore) students visited DigiPen's home campus in Redmond, Washington, USA.



SIT faculty and students met up with representatives from the Metropolia University of Applied Sciences in Finland.