SITizen BUZZ
YOUR QUARTERLY E-NEWSLETTER

SIT Bolsters Food Technology Offerings to Support Burgeoning Agri-Food Sector in Singapore

Set to launch FoodPlant, a brand-new small batch food production facility come early 2022, SIT will also offer the first specialised hands-on High Moisture Extrusion Technology course to the public

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The Singapore Institute of Technology (SIT) announced new measures that will bolster its offerings for professionals and companies looking to level up and create a bigger impact in the Food Technology sector in Singapore.

The measures include a new small-batch food production facility that will enable local food players to trial new products on a smaller and more cost-effective scale, as well as the introduction of a new Continuing Education Training (CET) course in High Moisture Extrusion Technology (HMET).

These initiatives will help equip the local workforce and companies with added capabilities to leverage the global momentum in sustainable food production, and develop new innovative food products to meet evolving consumer demand.

Open for Founding Members: Small Batch Production Facility to Boost Food Innovation

Designed to help food companies reduce capital and operating costs through shared facilities and services, the new FoodPlant is now open for pioneer membership.

Run by SIT in partnership with Enterprise Singapore (ESG) and JTC, the facility is targeted to be launched in early 2022 at JTC Food Hub @ Senoko. It will provide a space for a range of food companies, from startups, SMEs to MNCs to test the viability of their new products via small batch production.

Food manufacturers often face challenges such as a lack of quality facilities, expensive equipment, large opportunity costs and high minimum order requirements from outsourced manufacturers. Hence, the new facility will provide a much-needed boost to food manufacturers looking to develop and scale the rollout of new products, post R&D.

Said Ms Bernice Tay, Director, Food Manufacturing, Enterprise Singapore, "The changing environment and consumer preferences make it even more critical now to have differentiated products that address market needs. The new facility can help food manufacturing companies kickstart their innovation efforts, while mitigating some of the cost and equipment challenges they may face, especially in the current climate. We encourage companies to tap the facility's services to test-bed new technologies such as high-moisture extrusion technology and accelerate their new product commercialisation."

"FoodPlant is a strategic addition to JTC Food Hub @ Senoko. As the first shared facility for small batch production, FoodPlant will plug into the large ecosystem of food companies and food start-ups in Singapore, and help them to accelerate the development, adoption and commercialisation of new food technologies. We will connect food companies in our estates island-wide to tap on this new facility," said Mr Eugene Lim, Director of Food and Lifestyle Cluster, JTC.

Players in the Food Technology space can now start taking advantage of FoodPlant's facilities and consultancy services ahead of its opening next year through pioneer memberships that offer significantly reduced annual membership fees.

As FoodPlant's founding members, companies will also enjoy priority booking of facility and additional discounts on top of early registrations. For more information on its membership plans, interested parties can email hello@foodplant.com.sg or visit www.foodplant.com.sg.

First in Singapore CET Course to Provide In-Demand Hands-On Skills for Food Tech Professionals

The extruder that texturises plant-based proteins into viable meat alternatives. A similar extruder will be available at the upcoming FoodPlant.

Additionally, SIT has launched a new hands-on Food Technology CET course, 'High Moisture Extrusion Technology (HMET) for Meat Analogues' on 24-25 June 2021.

Through the course, food technology professionals will be trained on high moisture extrusion technology (HMET) – a process that texturises plant-based protein into viable meat alternatives – which has also become increasingly popular due to the global meat-free movement gaining pace.

HMET is key to kickstarting the production of meat analogue products from plant protein sources, such as wheat gluten, soy and pea proteins. An extruder machine similar to the one used for this CET training course will be available at the FoodPlant, as part of the facility's wide range of affordable pilot scale equipment.

Led by Assoc Prof Lim Bee Gim, Chemical Engineering and Food Technology cluster, SIT, and CEO, FoodPlant, participants will learn how to yield product textures that resemble muscle meat via extrusion technology upon completion of this training course. These products can then be further processed to produce plant-based meat alternatives or ready-to-eat products that involve other conventional meat processing operations such as slicing, mincing or marinating.

"With the increased availability and consumption of novel plant-based foods gaining ground in recent years, this first-of-its-kind course offered by SIT and the opening of our new FoodPlant will no doubt benefit local companies keen to learn more about this unique food production process and include it as part of their manufacturing repertoire. Aligned with Singapore's renewed focus on seizing growth opportunities in sustainability, we hope that our suite of new offerings will provide a boost for the Food Technology sector in Singapore, alongside our ongoing industry partnerships and existing academic programmes," said Assoc Prof Lim.

Helping Future Nurses Overcome Challenges

An endowed gift from the Diana Koh Foundation has made possible the Lim Leng Swan Study Grant for Nursing undergraduates

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Nursing students of all nationalities who are eligible for financial aid at the Singapore Institute of Technology (SIT) have a timely new source of support – the Lim Leng Swan Study Grant. Valued at $5,000 each, four Study Grants will be given out annually and in perpetuity, from the upcoming Academic Year 2021/22 onwards. The grants are tenable for the recipients' entire course of studies.

The Study Grant is made possible by a gift from the Diana Koh Foundation, through The Community Foundation of Singapore. Madame Maria Lim Leng Swan, the mother of Ms Diana Koh Ming Ying, passed on in 2008. Ms. Diana Koh passed away in May 2019, leaving behind an Estate that she has willed to charitable organisations in Singapore. Given Diana's deep devotion to her mother, her Estate has deemed it appropriate to leave a legacy in memory of Madame Maria Lim Leng Swan by providing support to the nursing sector in Singapore from the Diana Koh Foundation. Madame Lim was a trained nurse who had to overcome many challenges in her lifetime. Yet she raised Diana to be a successful and caring individual. This legacy is intended to celebrate both their lives.

Said Prof Tan Thiam Soon, President, SIT: "The ongoing pandemic has shown more clearly than ever the valuable role of nurses, both in saving lives and in providing a depth of care that can help restore body and spirit for their patients. We are deeply grateful for the Diana Koh Foundation's support in nurturing passionate future nurses for the healthcare sector."

Meet the Neonatal Intensive Care Unit's New Heroes: Software Engineers

A team of Year 2 ICT (Software Engineering) students create an impactful productivity app for the Neonatal Intensive Care Unit team at National University Hospital

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(From left) Mr Tan Phee Boon, Mr Elson Pang, Mr Muhammad Haikal Bin Abdull Razak and Mr Darren Ong demonstrate how Software Engineering can help bridge healthcare and ICT to create a meaningful impact on lives through their app.

What began as a student project for Software Engineering students Mr Elson Pang, Mr Tan Phee Boon, Mr Darren Ong and Mr Muhammad Haikal Bin Abdull Razak came to fruition as an innovative productivity tool that was used by doctors in the Neonatal Intensive Care Unit (NICU).

"I've always wanted to do something related to healthcare, and that can have a huge impact on society," said Mr Pang. "It's the very reason why I embarked on software engineering – because I was very passionate about helping others through ICT," he added.

The initial brief for the project was to come up with a mobile database to store medical information. However, the team later identified opportunities to increase the app's functionalities. They scoped three key workflow areas to improve on:

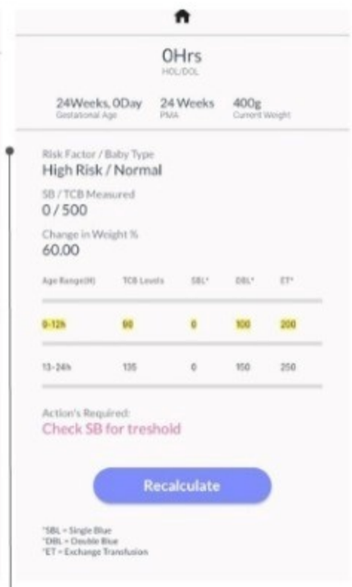
Minimise human error: The previous process required manual input and calculation using Excel, and the mobile app eliminates this by providing faster and better computation on the spot. In fact, the team managed to resolve the issue of computing the formula right down to the decimal point.

Offline capability: Since medication is updated very frequently, the team managed to create a database that could be updated not just on-the-go but also offline.

Portable solution: In emergencies, a mobile app with its portability is definitely an advantage. In cases of infant resuscitation, a lot of medication and tubings are required, and with the app, doctors only need to input basic details in order to generate life-saving information.

Loading screen of the app created by ICT (Software Engineering) students.

Homepage of app where doctors can easily input an infant's data.



An example of how the app helps medical professionals monitor the health of a baby. This page provides doctors with an overview of what the baby's jaundice level should be.

One of the charts that the app could churn out for doctors to easily refer to.

The team worked together on the app for two days a week over a period of about five months, allowing Dr Low and her medical team to pilot test the app for safety before it was rolled out in the Neonatal Department. "It was encouraging to see how everyone worked really hard on the app within the given time, despite having to conduct their research and iterations remotely," said Dr Low, referring to how all the meetings were conducted virtually last year due to COVID-19 measures.

The entire project was a culmination of what the team had learned by Year 2 of their Software Engineering degree, including Mobile App Development, Human-Computer Interaction, and Intro to Software Engineering. These modules helped the team create an intuitive, easy-to-use User Interface (UI) within an agile framework methodology.

Dr Low Jia Ming, who was in charge of the students' project with NUH's NICU, found the team easy to work with and incredibly patient with their requests. "They went beyond the call of duty to ensure that the app could be used, and I am immensely grateful for it," said Dr Low.

Timely Support Tides Them Through

The Ngee Ann Kongsi Emergency Relief Fund, established in June 2020, has helped SIT undergraduates deal with the financial impact of the pandemic

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Last year, in the thick of the pandemic, a gift from The Ngee Ann Kongsi made possible The Ngee Ann Kongsi Emergency Relief Fund at the Singapore Institute of Technology (SIT). The Fund was established to support SIT undergraduates who face unexpected financial hardship caused by the COVID-19 outbreak. This included students whose family had faced a loss of income, or who had found their own part-time work or opportunities for the Integrated Work Study Programme (IWSP) affected.

The Fund was awarded to 65 undergraduates who received grants valued at $500 each over a duration of three consecutive months. Among these was Ms Cho Li Ying from the Hospitality Business programme. Li Ying lost her part-time job and the fund came in time to help her with her personal and family's expenses. She said, "My ageing parents have been very worried about our finances because both of them are not working and I am still studying. I am extremely grateful for this timely support from the donors so my family can be less worried about our financial burden and I can stay focused for my final year. You have made a difference in our lives during these difficult times." Now in her final year, Li Ying will be graduating soon, and has found a full-time job.

The Ngee Ann Kongsi has been a steadfast philanthropic supporter of SIT and its students since 2017. In addition to the Emergency Relief Fund, the Kongsi has also made possible The Ngee Ann Kongsi Scholarship to nurture talented undergraduates throughout their course of study, as well as The Ngee Ann Kongsi Gold Medal (For the Most Outstanding Graduating Student).

Formed in 1845, The Ngee Ann Kongsi has been a prominent supporter of educational and other charitable causes in Singapore.

Deepening Applied Learning for an Era of Disruption

Prof Chua Kee Chaing, Deputy President (Academic) & Provost on how four strategic thrusts are propelling SIT on its trajectory to be Singapore's premier university of applied learning

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Since 2020, the Singapore Institute of Technology (SIT) has been working on four strategic thrusts to strengthen its applied learning pedagogies. Prof Chua Kee Chaing, Deputy President (Academic) & Provost, SIT, says the move is in line with SIT's mission to nurture work-ready professionals and lifelong learners through the applied learning pathway. The four strategic thrusts are:

Deepening Applied Learning: SIT has embarked on a programme harmonisation effort to introduce transferable skills and weave inter-disciplinary learning into the curriculum. These components are crucial in moulding highly employable and adaptable SITizens who are equipped with skills to work in adjacent sectors when necessary.

Pioneering Workplace Learning: SIT will pioneer a competency-based workplace learning pathway and will pilot new degrees to admit professionals based on the competencies they have built during their course of work. These degree programmes will further equip them with knowledge and skills and enhance their career prospects.

Strengthening Applied Research: SIT is pursuing applied research projects to address the needs of small and medium-sized enterprises (SMEs) and help them in their transformations. A plan is being mapped out where SIT can conduct applied research for SMEs, and identify partners and funding to leverage on.

Leveraging Living Lab: SIT is developing a virtual SIT and a digital twin to support applied learning, applied research, as well as provide selected end-user services. These efforts will bring SIT closer to realising a campus that can inspire students and faculty to innovate and transform industry and the community. To make the Living Lab operational by 2024, plans in testing the operating model, curating inventory of applications and use cases, as well as developing the technology architecture are underway.

In the following Q&A, Prof Chua elaborates on how these efforts will differentiate SIT from other universities:

Q: How important are interdisciplinary learning and transferable skills in ensuring that our students are employable and future-ready?
A: Ensuring that our students have mastery of their disciplinary knowledge is extremely important as we are training them to be professionals. In fact, companies tell me that this is a given when they shortlist candidates for job interviews. Graduates who exhibit strong transferable skills will stand out as they will be more effective in working with others and more agile in handling different tasks.
Issues and problems at work are becoming increasingly more complex. Solutions to complex problems are never mono-disciplinary in nature, so the sooner our students get exposed to inter-disciplinary learning, the better they will be prepared for the real world. Inter-disciplinarity is not about opening up many modules from different disciplines for students to read, and leaving it to them to connect the dots. It is about curating relevant modules from adjacent disciplines that are (or will be) impacting the industry considerably. What we want is for our students to learn more deeply the adjacent disciplinary knowledge that might be needed at work later. We also want them to be comfortable working in multi-disciplinary teams. For this, we will create whitespace opportunities for them to work in teams of students from different programmes.

Q: How will the competency-based workplace learning pathway impact the way degree programmes are delivered?
A: It is an important initiative, given the drive for lifelong learning and the aspiration to gain a university degree. Both universities and companies must strongly believe that it is better for someone in full-time employment to upskill, compared to the employee pursuing a part-time degree while working or doing a full-time degree. The university and company would need to work very closely to design and implement the programme to meet the needs of the company – without affecting the learning outcomes of the programme that define its quality, insofar as professional recognition is concerned. It is quite tailored, but scaling up is possible if we work with a trade association or chamber to cover an entire industry sector.

We are moving forward with this by leveraging our existing degree programmes. We create another pathway that uses competency-based assessments to develop workplace learning activities that can lead to the same learning outcomes of our existing programmes. Through this, we can also recognise prior competencies and award credits accordingly, enabling learners to complete their degree faster. Inevitably, there will be gaps that need to be bridged, either through having the learners return to campus for a day or two per week, or through online modules. This workplace learning pathway will run alongside the traditional on-campus pathway which will continue to cater to learners who prefer to study full-time.

Q: What is SIT's niche in applied research? What can we do to level up our competencies in this area?
A: As a University of Applied Learning, we position our research to bridge knowledge creation to utilisation. So this spans technology readiness levels (TRLs) 3 to 7. At TRLs 3-5, we do what we term as translational research, where we take the results of basic research (from other Autonomous Universities, A*STAR or our overseas university partners) a step closer to application. At TRLs 5-7, we focus on innovation activities and work with companies to develop prototypes that they can use and commercialise.

Our academic staff, comprising faculty and Professional Officers, is quite a unique combination that is well suited to lead in our translational research and innovation activities, respectively. Our students, whether industry postgraduate students or undergraduate students, will be involved in our research and innovation projects with industry. They form the talent pipeline and catalysts for transformation that we hope will help move local companies up the innovation value chain.

For translational research, we have identified five focus areas (Energy Resilience, Sustainable Food Innovation, Field/Service Robotic Engineering, Sustainable Infrastructure Engineering & Maintenance, and Community Health Transformation), as well as three horizontal enablers (Cyber Security, Augmented/Virtual Reality, and Artificial Intelligence). For Financial Year (FY) 2021, we will focus on building up two areas – Sustainable Food Innovation and Sustainable Infrastructure Engineering & Maintenance. This means identifying potential partners and funding agencies that we can work with.

We will also put together the relevant pieces needed to support innovation activities, such as the RaPID Centre and Design Factory at SIT, in a holistic end-to-end innovation framework that includes intrapreneurship programmes to prepare our students for their role as catalysts for transformation.

Q: It is exciting that we are rolling out various digital initiatives such as VirtualSIT. How will it pan out in the next three years?
A: VirtualSIT is the online version of SIT. Just as we plan the future SIT campus in Punggol as a living lab, VirtualSIT will have a digital twin of the physical living lab. This potentially will allow us to have seamless interactions between the physical and virtual worlds of SIT. It will open up innumerable applications and services for all SIT stakeholders, whether in education, research or other future missions of SIT.

Preparing for Your Future Home

SITizens get an in-depth look into the ins-and-outs of owning an HDB home in Singapore, from BTOs to Executive Condos

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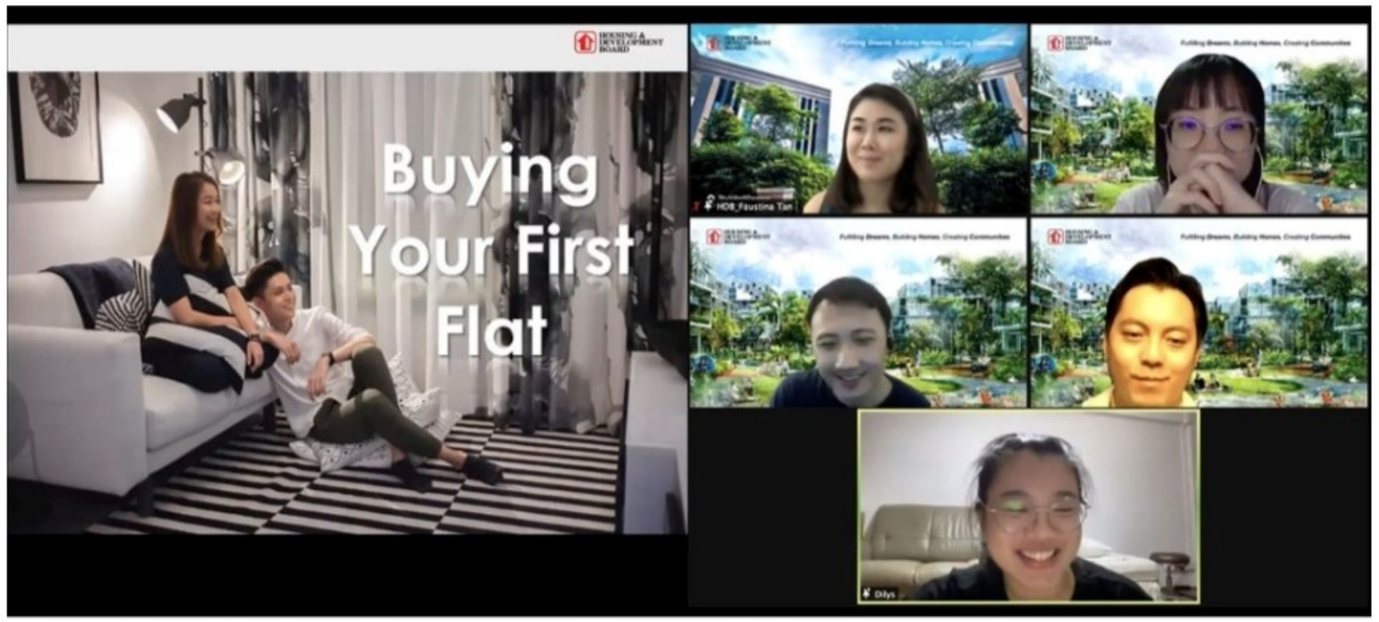

SITizens had the opportunity to interact with representatives from HDB and ask questions about buying a home in Singapore.

One of the most defining moments of your adult life is purchasing your first home. On Wednesday, 7 July 2021, over 100 SIT Alumni attended Buying Your First HDB Home, a webinar organised by the SIT Alumni Career Network in collaboration with the Housing Development Board (HDB).

The webinar provided an in-depth guide on Build-to-Order (BTO) flats as well as the necessary financial planning needed to prepare for a flat purchase. A quick poll showed that a majority of the participants were either currently planning their finances before exploring available housing options, or wanting to find out more about such options and the buying process for flats in Singapore.

While the webinar mainly focused on BTOs, it also covered other types of housing such as resale flats and Executive Condominiums. Participants also had the opportunity to ask questions through a Q&A segment with panellists from HDB. Some common concerns were how one's ballot chances for a BTO could be affected, as well as how to best utilise the housing grants available.

Ms Dilys Ho, a Physiotherapy alumnus, is looking forward to having her own space and independent living when she gets her future home. "Listening to the webinar and hearing other people's questions broadened my perspective of what to look out for in a flat," she said. "Learning about how to plan our finances was enlightening for me, especially since my partner usually handles that part."

Aeronautical Engineering alumnus Mr Gordon Yeo joined the webinar to find out more about housing grants. "I just purchased a condo, but my partner and I definitely want to plan ahead for our future family," he explained. "I have learned more about the home-buying journey and the types of home options and loans that would be suitable for us," he said.