

2022

FOOD,

CHEMICAL

AND

BIOTECHNOLOGY

# SIT AT

# A GLANCE

5

**Programme  
Clusters**

6

**Campuses**

6

**Overseas  
University  
Partners**

38

**Undergraduate  
Degree Options**

>135

**Student Clubs,  
Committees, and Chapters**

>200

**Student Events and Activities**

95%

**of Students Secured a  
Job Within Six Months of  
Completing Their Final Exam<sup>^</sup>**

\$3,675

**Average Starting Salaries  
of Our Graduates<sup>^</sup>**

<sup>^</sup>Source: 2020 Graduate Employment Survey

# SI Tizen-DNA

## Thinking Tinkerers

- Fundamentally Sound
- Practice-oriented

## Able to Learn, Unlearn and Relearn

- Embracing Change
- Learning Beyond University

## Catalysts for Transformation

- Improving Efficiency
- Creating Value Through Innovation
- Challenging Status Quo

## Grounded in the Community

- Serving the Community Through Knowledge and Skills

## WHY PURSUE

# Food, Chemical and Biotechnology



## KEY PILLARS OF SINGAPORE'S ECONOMY

The chemical, energy, pharmaceutical, and food industries are key pillars of Singapore's economy. There is a great demand for well-trained graduates with the expertise to solve complex interdisciplinary problems and contribute to industry innovation and growth.



## OUR APPLIED LEARNING PEDAGOGY

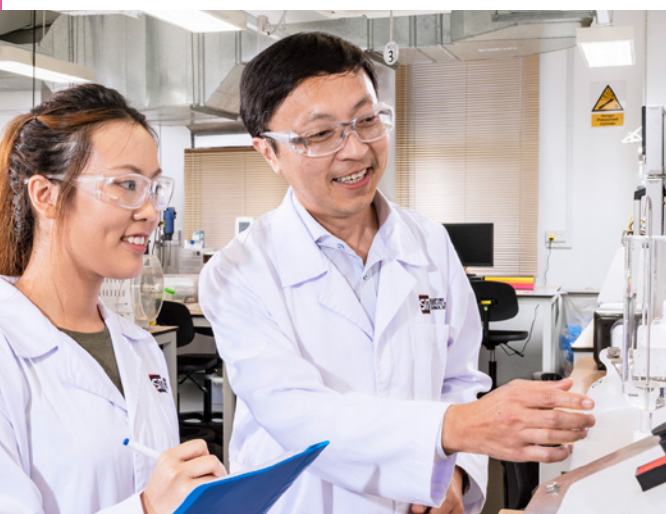
Through the seven- to 12-month Integrated Work Study Programme (IWSP), you will get to contextualise your learning from the classroom in the industry and integrate theoretical knowledge with industry-relevant skills.





## INDUSTRY-CENTRIC

Our unique pedagogy, coupled with an industry-centric curriculum, will give you a competitive edge in the job market. You can apply your integrated knowledge in science, technology, and engineering to develop and improve products and processes in a sustainable way, without compromising the environment or safety.



## SPECIALISED TRAINING

We offer programmes in Chemical Engineering, Pharmaceutical Engineering, and Food Technology, where you will have an opportunity to develop a strong foundation through specialised training to acquire practical knowledge and skills.



## MEANINGFUL CAREER PROSPECTS

With a wide range of specialist and transferable skills, you can look forward to an exciting career that will enable you to play an important role in the sustainable production of chemicals, pharmaceuticals, or food. You will address energy and food security challenges and develop innovative solutions that will meet today's challenges and tomorrow's needs.

# Applied Research

Our students have the opportunity to embark on cross disciplinary applied research projects with our faculty members and industry partners in areas such as healthcare, urban farming, sustainable infrastructure, fintech, machine learning, and many others. **Our cutting-edge projects, linked to local and overseas companies, receive support through government funding.**



## Innovative Food Alternatives: Plant-Based Spirulina-Infused Seaweed Chicken

With plant-based alternatives gaining popularity, SIT students partnered with Philippines-manufacturer of plant-based foods Worth the Health Foods (WTH Foods) and leading industry ingredients manufacturer, Roquette, to create the plant-based seaweed chicken with spirulina. The project was inspired by the popularity of finger food — seaweed chicken. Coming up with a re-creation of a plant-based version is novel and potentially highly marketable.

## Cellular Immunotherapies Giving Hope to Cancer Patients

Adoptive cell therapy is a form of immunotherapy treatment that uses the cells of our immune system to remove cancer. T cells are some of the most potent immune cells in our body. An SIT research team experimented on the suitable structure of scaling up T cell expansion in bioreactors. The robustness and reproducibility of the process was also validated using T cells from healthy donors. Their preliminary findings were presented at the International Society for Cell and Gene Therapy (ISCT) 2021 New Orleans Virtual Annual Meeting.





## Understanding the Science of Stains to Clean Better

SIT researchers are working with A\*STAR to find a solution to reduce the cleaning turnaround time at pharmaceutical plants, by studying the particles created from the pharmaceutical manufacturing process, how they adhere to surfaces, and the best way to remove them. By designing the cleaning processes, they will help improve efficiency and reduce the turnaround time for production plants by creating an industry standard that will inform pharmaceutical operators about the most effective ways to clean according to the unique requirements of different drugs.

## Improving Patient Care Through Better Protection on Urinary Catheter Coatings

SIT, in collaboration with clinicians from the National University Hospital, have incorporated antimicrobial peptides into urinary catheter coatings to improve the antimicrobial protection on them. This will improve patient care, as frequent changes in catheterisation can lead to infections in patients, causing significant patient discomfort, and increase treatment costs.



# MEET LIMING

**Cao Liming**  
**Graduate (2021)**  
**Food Technology**

**Production Planner**  
**Lek Lim Nonya Cake**  
**Trading Pte Ltd**



**Becoming work-ready with SIT**  
The applied learning experience at SIT allowed me to be more confident in problem solving and better at adapting to different environments.

**In 10 years' time**  
Lead a team in launching and exporting local products to overseas markets.

## **Pursuing Food Technology**

I am a big foodie and was curious how different food products are manufactured and how they reach consumers.

## **On choosing SIT**

I believe SIT is the only local university that offers a programme in food science and technology through practise-oriented means. I saw the benefits of SIT's hands-on approach because I wanted to be able to tackle industry problems more readily when I enter the workforce.

## **My IWSP experience**

I had an eye-opening and fulfilling time at Lek Lim Nonya Cake Trading Pte Ltd, when I helped the company with the successful launch of a new food product. I decided to pursue a full-time position there, when the opportunity presented itself.



Click [here](#) to watch my video.

# Chemical Engineering

## Campus Location

SIT@Dover

## Career Opportunities

You can look forward to careers in these areas:

- Fine and Specialty Chemicals
- Pharmaceutical
- Petrochemicals
- Sustainable Industries
- Additive Manufacturing
- Data Engineering
- Research



The joint degree programme in Chemical Engineering, offered by SIT and Technical University of Munich, is the first in Singapore to include Industry 4.0 topics, relevant to the current and future needs of the chemical industry.

This four-year direct honours degree programme will address the growing manpower demands of the local and global chemical industry by giving you deep skills in data engineering and additive manufacturing, through intensive laboratory experiments and analysis. You will have a choice of specialisation in the third year in either Data Engineering or Additive Manufacturing.

## Curriculum Highlights

- Chemical Engineering with Industry 4.0 specialisation
- Industrial Automation and Software Engineering
- Data Processing and Analytics
- Polymer Engineering
- 3D Printing and Material & Failure Analysis
- Bachelor Thesis
- Eight-month Integrated Work Study Programme (IWSP)
- Overseas Immersion Programme (OIP)

Digitalisation and additive manufacturing is becoming more important in process engineering. The SIT-Technical University of Munich Chemical Engineering programme

**tailors our students' education to meet the needs of the chemical and chemical-related industries,**

coupled with knowledge of future technologies and production, so they can enter the workforce directly.

**PROF. DR.-ING.  
KAI-OLAF HINRICHSSEN**  
Professor  
Chemical Engineering  
Technical University of Munich

# Food Technology

## Campus Location

SIT@Dover

## Career Opportunities

You can look forward to careers in these specialisations:

- Food Manufacturing
- Product Development
- Quality Control and Assurance
- Sensory, Nutrition and Regulatory

The joint degree programme in Food Technology with Honours, offered by SIT and Massey University, offers a curriculum focused on Food Product Technology, while combining food science, food engineering, and food business. Aimed at educating and equipping students with the fundamentals of food science and applied food technology skills, the programme will expand your knowledge on how to apply scientific and engineering principles. You will also be able to recognise and create what is needed in the marketplace.

You will also gain entrepreneurial skills and be given various opportunities to approach real challenges through projects that focus on industry-relevant problems and solutions. Students can gain work experience in food companies through SIT's unique Integrated Work Study Programme.

## Curriculum Highlights

- Food Microbiology and Safety
- Food Characterisation
- Food Packaging Engineering and Legislation
- Industrial Systems Improvement
- Food Technology Project
- Innovative Food Design and Development
- Seven- to 12-month Integrated Work Study Programme (IWSP)



Since 2017, we have partnered and collaborated closely with SIT's Food Technology programme. The quality of the faculty and programme is reflected in the impactful performance that SIT students have consistently displayed in KH Roberts.

**Independence, applied competence,  
and possessing a result-oriented mindset  
are qualities that we have observed**

in SIT students. We value these qualities and trust that SIT graduates will be the transformational talents of tomorrow in the industry.

**DR PETER KC ONG**  
Chief Executive Officer  
KH Roberts

# Pharmaceutical Engineering

## Campus Location

SIT@Dover

## Career Opportunities

In addition to the pharmaceutical industry, you can look forward to careers in these areas:

- Chemicals
- Biotechnology and Life Sciences
- Nutraceuticals
- Flavours and Fragrances

As the first Pharmaceutical Engineering with Honours degree in Singapore, this programme is built on an interdisciplinary curriculum that integrates engineering, life science, and chemistry, with an industry focus. You will be trained to be theoretically-grounded and practice oriented, for the knowledge-intensive pharmaceutical industry and related sectors.

Distinguished by a curriculum that is strongly focused on cutting-edge, industry-compliant concepts and know-how, you will gain core competencies in the development and manufacture of two largest classes of pharmaceutical drugs – biologics and small molecule drugs. Subsequently, you will be trained in the full spectrum of skills pertinent to drug manufacturing.

## Curriculum Highlights

- Current Good Manufacturing Practice
- Operational Excellence
- Plant Design and Operation
- Process Automation, Monitoring and Control
- Process Safety
- Process Validation and Quality by Design
- 12-month Integrated Work Study Programme (IWSP)



Partnering with SIT offers collaborators access to students who are enthusiastic and have a specific interest in Pharmaceutical Engineering. This is beneficial for industry partners as the students have a good understanding of the processes used in the industry, and they have practical experience in using relevant equipment and technology.

**SIT's IWSP has provided us with the opportunity to train students and identify future employees**

for the company. As the students have already spent time working in the company, they are familiar with the environment and the processes, which will enable a smooth transition without additional training required.

**DR DEBBIE LEE**  
Principal Scientist  
Tychan Pte Ltd

# MEET JERALDINE

**Ho Wan Xin, Jeraldine**  
**Year 2**  
**Chemical Engineering**



**One song to describe my SIT experience**  
'Defying Gravity' by Idina Menzel.

**One myth about SIT**

That SIT only accepts polytechnic students. But this is not true. There are students from junior colleges and international schools who choose SIT for its unique applied learning approach.

**Pursuing Chemical Engineering**

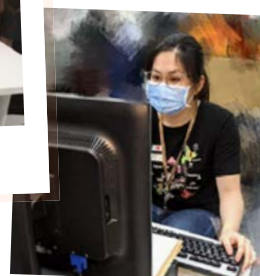
I worked at the Singapore Food Agency prior to SIT. After two years, I wanted to develop my skills further as an engineer and widen my career pathway.

**My secret talent**

I can play several musical instruments e.g. piano, timpani, mallet, and auxiliary percussion.

**Favourite campus moment**

It was fun getting to meet and help my juniors. I also became closer to my classmates as I had the chance to bond with them.



**One tip for prospective students**  
Don't be afraid to ask questions.

**In 10 years' time**

I hope to explore my options either as a validation engineer or a research scientist and excel at a job I truly enjoy.

Click [here](#) to watch my video.

# START YOUR NEXT STEP HERE

**W**e adopt an aptitude-based approach in assessing applicants for admission. This means we look beyond your grades and see you as an individual with diverse qualities, talents, and life experiences. We are interested in who you are, and how you can contribute to the community and industry.

We look out for...



**Academic Proficiency  
and Prior Learning**

**Relevant Work Experience**



**Related Exposure and Achievements**

**Passion and Aptitude**



**Performance During Interviews**

Submit and check your application status via [Admission.SingaporeTech.edu.sg](https://Admission.SingaporeTech.edu.sg).  
For application dates and deadlines, visit [SingaporeTech.edu.sg](https://SingaporeTech.edu.sg).

# ADMISSIONS

## TIMELINE

**MID-JAN – MID-MAR**

- ▶ Application Opens
- ▶ SIT Scholarship Application Opens

- ▶ ▶ Shortlisted applicants will be assessed for Admissions and a Scholarship concurrently. For specific degree programmes, you may have to submit portfolios or essays, and/or be assessed through written or technical tests.

**FEB – MAY**

**APR – MAY**

- ▶ ▶ Check your Admissions Application Outcome. Students awarded Scholarships will receive their offers concurrently.

- ▶ If you are successful, accept our offer!

**BY JOINT ACCEPTANCE DEADLINE**

**JUNE**

**FINANCIAL ASSISTANCE APPLICATION OPENS**

- ▶ When you have accepted our offer, you will receive a pre-matriculation package.

- ▶ Admissions
- ▶ SIT Scholarship

# Admission Requirements

## GCE 'A' Level/IB Diploma/NUS High School Diploma

DEGREE PROGRAMME	GCE 'A' LEVEL	IB DIPLOMA
<b>Chemical Engineering<sup>1</sup></b>	A pass in H2 Mathematics A pass in one H2 Science subject (Biology, Chemistry, or Physics)	A pass in HL Mathematics A pass in one HL Science subject (Biology, Chemistry, or Physics)
<b>Food Technology</b>		
<b>Pharmaceutical Engineering</b>	A pass in any three of the following H1/H2 subjects: (Biology, Chemistry, Physics, or Mathematics)	A pass in any three of the following SL/HL subjects: (Biology, Chemistry, Physics, or Mathematics)

- GCE 'A' Level applicants should have obtained passes in at least two H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting.
- International Baccalaureate (IB) applicants should have obtained a minimum grade five for at least two HL and one SL subjects, and the IB Diploma.
- NUS High applicants should have obtained the NUS High School Diploma.

Applicants with the above qualifications are also required to fulfil the Mother Tongue Language (MTL) requirements stipulated by the Ministry of Education.

Note:

<sup>1</sup>GCE 'A' Level/IB applicants are required to fulfil additional requirements as stipulated by the German Higher Education System. Refer to details on the website. For further enquiries, please contact TUM Asia Admissions Office at [admission@tum-asia.edu.sg](mailto:admission@tum-asia.edu.sg).

For up-to-date information, please refer to [SingaporeTech.edu.sg](https://SingaporeTech.edu.sg).

# Admission Requirements

## Diploma from any local Polytechnic

### DEGREE PROGRAMME

### DIPLOMA FROM ANY LOCAL POLYTECHNIC

#### Chemical Engineering

Open to all polytechnic diploma holders. Applicants with Chemical Engineering or closely related Science and Technology diplomas are strongly encouraged to apply.

Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diplomas.

#### Food Technology

Open to all polytechnic diploma holders. Applicants with relevant diplomas i.e. Diploma in Food Science and Nutrition, Diploma in Food Science and Technology, and Diploma in Food, Nutrition and Culinary Science (formerly: Applied Food Science and Nutrition), may apply for module exemptions of up to a maximum of three trimesters in the first year.

#### Pharmaceutical Engineering

Open to all polytechnic diploma holders. Applicants with relevant diplomas may apply for module exemptions.

Exemptions may also be considered for relevant professional or industrial certifications.

Applicants with other qualifications should complete at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.

For up-to-date information, please refer to [SingaporeTech.edu.sg](https://www.singaporetech.edu.sg).

# YOU CAN SEE YOUR FUTURE FROM HERE



**G**et a chance to study at SIT's new campus situated in the heart of Punggol Digital District.

- Campus-in-a-Park
- Smart and Sustainable University
- Companies can tap SIT's applied learning and research capabilities
- Closer Industry Partnership with Collaboration Loop linking SIT and JTC buildings
- Opportunities to work on real-world business problems

Click [here](#) to find out more.

# TAKE YOUR NEXT STEP HERE

When you become a SITizen, you join a growing pool of successful alumni.

If you are ready to begin the application process and want to learn more, visit us at [SingaporeTech.edu.sg/Admissions](https://SingaporeTech.edu.sg/Admissions).

SO, WHO'S READY  
FOR AN ADVENTURE?

# CONTACT US

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(Postgraduate Programmes)

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✉ Innovate@SingaporeTech.edu.sg

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☎ +65 6592 1094  
✉ Advancement@SingaporeTech.edu.sg

## LOCATE US

### SIT@DOVER

10 Dover Drive, Singapore 138683

### SIT@NP BUILDING

Ngee Ann Polytechnic  
537 Clementi Road, Singapore 599493

### SIT@NYP BUILDING

Nanyang Polytechnic  
172A Ang Mo Kio Avenue 8, Singapore 567739  
(beside Blk Q of NYP campus)

### SIT@RP BUILDING

Republic Polytechnic  
43 Woodlands Avenue 9, Singapore 737729

### SIT@SP BUILDING

Singapore Polytechnic  
510 Dover Road, Singapore 139660

### SIT@TP BUILDING

Temasek Polytechnic  
Blk 29B Tampines Avenue 1, Singapore 528694

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SIT reserves the right to amend the information  
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information, please visit [SingaporeTech.edu.sg](https://www.singaporetech.edu.sg).



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