ABOUT SIT

Singapore Institute of Technology (SIT) is Singapore’s University of Applied Learning. With a mission to nurture and develop individuals who impact society in meaningful ways, SIT aims to be a leader in innovative learning by integrating learning, industry, and community.

SIT offers applied degree programmes targeted at growth sectors of the economy with a unique pedagogy that integrates work and study. Applied research is weaved into students’ learning experiences, where they work on real industry problems and create solutions to meet industry needs.

As part of the university’s advocacy for the work-learn continuum, SIT strives to instil within its students a culture of lifelong learning and places an emphasis on skills needed by industry. SIT also aims to cultivate in its students four distinctive traits that form the SIT-DNA: Thinking Tinkerers; Able to Learn, Unlearn and Relearn; Catalysts for Transformation; and Grounded in the Community.

SIT-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
- Inspiring Others

GROUNDED IN THE COMMUNITY
- Serving the Community through Knowledge and Skills
APPLIED LEARNING PEDAGOGY
Learning at SIT is reinforced through laboratory sessions, flipped classrooms, gamifications and sharing sessions by experienced industry players. With the technical skills and knowledge attained, students get to apply what they have learnt to actual work situations in the Integrated Work Study Programme (IWSP).

SPECIALIST AND TRANSFERABLE SKILLS
While training to become deep specialists in their respective engineering disciplines, students also acquire skill sets, such as critical problem-solving, decision-making, project management and communication skills, which are transferable across industries and are highly valued by employers everywhere.

SYMBIOTIC RELATIONSHIP WITH INDUSTRY
Our engineering programmes at SIT have been developed through extensive consultation with industry, thus creating a curriculum that supports the industry’s needs in manpower development and innovation.

CAREER PROGRESSION OPPORTUNITIES
With strong directives from the government to grow the pool of engineers¹, an engineering-based education at SIT will enhance the adaptability and employability of our engineering graduates, as they gear up to contribute to the ‘future-proofing’ of Singapore’s economy.

Having done my service in the Republic of Singapore Navy, it has expanded my horizon to the maritime industry, especially in shipbuilding and maintenance. I wanted to challenge myself to pursue a field aligned to my interest, which is why I decided to enrol in the Naval Architecture degree programme. Although I had received offers from other universities, what drew me to SIT was its hands-on learning curriculum that is attuned to industry expectations. Most of the modules taught are intellectually stimulating and project-based, which require students to think outside the box. I am about to embark on my IWSP with Bureau Veritas, a world renowned Classification Society and I believe that I will be ready to take on the tasks entrusted upon me as I have the relevant technical skills, coupled with the continued mentorship of my professors. My goal after graduation is to continue serving in the Republic of Singapore Navy as a naval officer, where I’ll be ready to pursue a challenging and meaningful career.

CHAN KUAN YANG, ALISTAIR
Year 3
Naval Architecture
I’ve always been fascinated by tall and formidable buildings and structures in my travels. As such, I decided to pursue a relevant diploma in polytechnic, which further piqued my interest in Civil Engineering. The professors at SIT are very approachable and they put in a lot of effort to make lessons fun and engaging. One such example was how a lesson was set up as an escape room tutorial and we had to solve questions in groups to proceed to the next stage. This was one of the best and most memorable tutorials I have ever had!

To make the best of my university journey, I have also taken on various leadership roles, such as the treasurer of the Civil Engineering Student Management Committee and a Diversity & Inclusion advocate. Through these opportunities, I hope to be able to give back to the university, and make a difference to my schoolmates’ university experience.

ELDRYNN TRISHAN TAN SWEE YONG
Year 3
Civil Engineering
HEAR WHAT THE INDUSTRY SAYS

Dedicated to a job well done, the students have proven themselves to be industrious, with the right focus on their jobs. With an exuberant outlook, they have integrated well into our organisation and contributed in ways, big and small. Their innate ability to excel at the workplace is evident in their diverse skills and we are proud to have them on our team!

**MS JOYCE LIN ANG**
Assistant HR Manager, Eastern Hemisphere
American Bureau of Shipping (ABS)

The main problem in the industry is finding good engineers with a great attitude, who are able to blend in with the rest of the team. SIT students are one of the best interns I’ve worked with as they are dependable and team players.

**MR GALIH DEWANDARU**
Deputy Project Commissioning Manager
Alstom Transport (S) Pte Ltd

The IWSP is a very good programme which gives students an early exposure to the marine industry, enabling them to anchor themselves in various specialties on real projects. This is desirable for the company and helpful for the students’ learning. They have been able to apply what they have learnt from the classroom directly into the industry.

**MS AUDREY KOH**
Zone HR Business Partner
(Marine & Offshore, South Asia Zone)
Bureau Veritas Marine (Singapore) Pte Ltd

SIT students are very engaged during their IWSP — they ask good questions and are enthusiastic in learning essential skills, which will help them become better engineers. The IWSP reduces the training time needed for new employees to embark on the jobs, should the students choose join their IWSP company after graduation.

**MR ADRIAN ONG**
Vessel Engineering Manager
Yinson Holdings Bhd

SIT students show a keen interest in understanding how the various aircraft systems operate. They are enthusiastic in understanding the nuts and bolts of these systems and their inner workings. I feel these are traits necessary to build a strong foundation and will put them in good stead for their future careers as Licensed Aircraft Engineers.

**MR TEO TAI YONG**
Maintenance Training Instructor
SIA Engineering Company

SIT students have gained good exposure, working with different nationalities at the shipyard, interacting with co-workers, supervisors, and even clients in the different projects they are participating in.

**MR TEO SOON HENG**
Project Manager
Keppel Offshore and Marine

SIT students are very engaged during the skills training sessions. Most of them have a strong sense of purpose. I suppose they have made up their mind on their career choice and want to make a good head start. Quite a couple of them actually demonstrated a degree of familiarity as if they had prior experience. I find them to be a well-disciplined batch.

**MR WILLIAM TOK**
Technical Skills Instructor
SIA Engineering Company

Quality engineers in lead frame operations are expected to deal with many different situations. Some situations may require simple fixes, while others may be more ambiguous and complex. The SIT Engineering graduates in our team have shown their expertise and professionalism in dealing with these situations. They are passionate in their work and relentless in learning and applying the knowledge acquired on the job.

**MR FRANKIE WONG**
Senior QA Manager
ASM Technology Singapore Pte Ltd

The IWSP allows the students to fully immerse themselves in the company culture, while providing them with the opportunity to experience the working life of an engineer. SIT students are dedicated, industrious and highly responsible. Throughout their internship, the students have shown that they take initiative and are good team players with what it takes to make a project successful.

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**MS IRENE YONG**
Assistant HR Manager, Eastern Hemisphere
American Bureau of Shipping (ABS)
AEROSPACE ENGINEERING

PROGRAMME INFORMATION

Degree Programme
- BEng Aerospace Engineering

Campus Location
- SIT@NP Building

Eligibility
- Polytechnic Diploma Holders
- A Level/IB Diploma/NUS High School Diploma Holders
- Other Year 12 Equivalent Qualification Holders

Visit SingaporeTech.edu.sg for the list of relevant qualifications.

PROGRAMME HIGHLIGHTS

- APPLICATION-ORIENTED TRAINING in aerospace engineering in Singapore’s context
- Heavy emphasis on UNMANNED AERIAL SYSTEMS (UAS) APPLICATIONS
- THREE-WEEK OVERSEAS IMMERSION PROGRAMME (OIP) at University of Glasgow
- EIGHT-MONTH INTEGRATED WORK STUDY PROGRAMME (IWSP)

The Aerospace Engineering programme is jointly offered by SIT and the University of Glasgow. This three-year degree programme will equip students with the specific skill sets necessary to meet growing manpower demands in the local and global aerospace industry, with a specific emphasis on autonomous aerial systems.

Students will be endowed with sound foundations in engineering through appropriate mathematics and physics courses, upon which specific unmanned aerial systems knowledge will be built. The programme also includes a mandatory Overseas Immersion Programme, during which students will undertake a group project, as well as witness the industry’s best practices through industrial site visits in Glasgow.

In the last year of the degree programme, students will get to apply the theoretical knowledge gained and refine their technical skills through an eight-month Integrated Work Study Programme in local and overseas companies, working in the areas of unmanned systems and aerospace engineering.

Graduates from the programme will be able to study and understand the behaviour of aerial vehicles, predict their performance, be familiar with their on-board systems and perform structural and aerodynamic analysis. Practical project work in the area of Unmanned Aerial Systems will allow the application of what has been learnt in the context of a real engineering problem. The degree also develops transferable skills, such as oral and written communication, teamwork, analytical abilities and time management, all of which provide a sound basis for employment in industry.

1 This is a direct honours degree programme, subject to students meeting academic requirements.
## CURRICULUM STRUCTURE

### YEAR 1

<table>
<thead>
<tr>
<th>TRIMESTER</th>
<th>Courses</th>
</tr>
</thead>
</table>
| 1         | Engineering Mathematics 1  
|           | Engineering Physics  
|           | Engineering Mechanics  
|           | Fundamentals of Electronics and Circuits  
|           | Fundamentals of Programming  
|           | Engineering Design Graphics  
| 2         | Engineering Mathematics 2  
|           | Dynamics  
|           | Control  
|           | Effective Communication  
|           | Aerospace Engineering Skills  
|           | Fluid Mechanics  
| 3         | Break  |

### YEAR 2

<table>
<thead>
<tr>
<th>TRIMESTER</th>
<th>Courses</th>
</tr>
</thead>
</table>
| 1         | Engineering Mathematics 3  
|           | Aircraft Performance  
|           | Computational Aerodynamics  
|           | Engineering Systems Modelling and Simulation  
|           | Flight Mechanics  
| 2         | Aerospace Propulsion  
|           | Flight Dynamics  
|           | Aerospace Control  
|           | Software Engineering  
|           | Career and Professional Development  
| 3         | Aerospace Manufacturing Processes, Materials and Structures  
|           | Risk and Reliability Analytics  
|           | Industrial Internet of Things and Data Analytics  
|           | Overseas Immersion Programme  
|           | Design Project  |
AEROSPACE ENGINEERING

CURRICULUM STRUCTURE

YEAR 3

TRIMESTER 1
- Integrated Work Study Programme

TRIMESTER 2
- Wireless Communications and Signal Processing
- Flight Systems
- Professional Engineering Practice
- Composite Materials and Finite Element Analysis
- Capstone Project

TRIMESTER 3
- Integrated Work Study Programme

WHAT TO EXPECT

During the first year of the programme, students will be expected to attend 12 to 15 hours of lectures and six to 10 hours of tutorials, as well as practical/laboratory sessions. Delivery methods generally vary across modules in each trimester and students are advised to check with their lecturers on the specific activities for the module. Students will be expected to spend a considerable amount of time developing their own understanding of the topics covered in lectures, answering questions and solving work examples designed to check their understanding, as well as preparing for tutorials. As the programme progresses, students will also have the opportunity to work in small teams of up to five people on practical application projects that enhance the learning of more advanced topics.

At the end of the second year, students will travel to the University of Glasgow for a three-week Overseas Immersion Programme. In the third and final year of the programme, students will undertake an Integrated Work Study Programme with a company for eight months, and be expected to work on their individual capstone project, based on a current industry problem during the last trimester.

CAREER OPPORTUNITIES

Graduates can look forward to working in, but not limited to, the following occupational fields:

- Unmanned Aerial Systems (UAS)
- Aircraft Engine Design and Servicing
- Defence Contractors
- Air Traffic Control
- Design Engineer (Avionics Production and Maintainability)
- Airworthiness and Quality Specialist
The Aircraft Systems Engineering programme is developed in collaboration with SIA Engineering Company (SIAEC), which provides extensive Maintenance, Repair and Overhaul (MRO) services to more than 80 international airlines worldwide. Built on an interdisciplinary curriculum that intersects engineering, science and a practical hands-on approach, the programme is designed to produce theoretically-grounded and practice-oriented graduates for the Aerospace and MRO industries. The curriculum will also incorporate an intensive eight-month Integrated Work Study Programme at SIAEC.

In addition to a degree awarded by SIT, graduates from this programme will also receive a Certificate of Recognition (CoR) from SIAEC, upon passing all their SAR-66 approved basic theoretical examinations and practical assessments. This CoR is recognised by the Civil Aviation Authority of Singapore (CAAS) and certifies that the holder has completed a SAR-147 Approved Basic Course. Graduates who decide to embark on a career as a Licensed Aircraft Engineer (LAE) with an MRO organisation in Singapore will be able to acquire their Aircraft Maintenance License (AML) in a shorter time, as compared to their peers.

Students in the second year with excellent academic performance can also look forward to the SIAEC Trainee Aircraft Engineer (TAE) Scholarship, which includes a 28-month training programme (TAE Programme) upon graduation, in order to qualify as a LAE. TAE scholars will be required to serve a bond with the SIAEC Group.

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1 This is a direct honours degree programme, subject to students meeting academic requirements.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>TRIMESTER</th>
<th>COURSES</th>
</tr>
</thead>
</table>
| 1     | 1         | - Engineering Mathematics 1  
         - Physics: Motion Dynamics  
         - Mechanics of Engineering Materials  
         - Electrical Circuits  
         - Electrical Devices |
|       | 2         | - Engineering Mathematics 2  
         - Physics: Waves, Optics and Thermodynamics  
         - Electronic Circuits  
         - Digital Electronic Instrumentation Systems  
         - Aircraft Materials 1  
         - Fluid Mechanics |
|       | 3         | - Engineering Mathematics 3  
         - Computer Programming Language  
         - Heat Transfer  
         - Aerodynamics  
         - Engineering Design Graphics  
         - Aircraft Materials 2 |
| 2     | 1         | - Aircraft Maintenance and Basic Practical Skills  
         - Overseas Exposure Programme (Optional) |
|       | 2         | - Aircraft Structures  
         - Fixed Wing Systems 1  
         - Aircraft Avionic Systems  
         - Technical Writing and Effective Communication  
         - Flight Performance |
|       | 3         | - Capstone Project  
         - Human Factors  
         - Fixed Wing Systems 2  
         - Aircraft Propulsion 1  
         - Flight Mechanics |

^ Students will spend 15 days going through the M7 Aircraft Maintenance module and 37 days of basic practical skills training at SIAEC.
AIRCRAFT SYSTEMS ENGINEERING

CURRICULUM STRUCTURE

YEAR 1

TRIMESTER

- Aviation Legislation
- Aircraft Propulsion 2
- Aircraft Electrical and Cabin Systems
- Introduction to Financial Accounting
- Capstone Project

TRIMESTER

- Integrated Work Study Programme

TRIMESTER

- Integrated Work Study Programme

PROFESSIONAL CERTIFICATION

Students will be trained to complete the SAR-66 basic theory and practical modules, certified by the Civil Aviation Authority of Singapore (CAAS), upon passing all the SIAEC exams.

WHAT TO EXPECT

In the programme, students will divide their time between three hours of seminar/lectures and two hours of tutorial or practical/laboratory sessions per module each week, where they will discuss ideas in depth with experienced faculty members and adjunct lecturers from the industry. They will be expected to spend a considerable amount of time developing their own understanding of the topics covered in lectures/seminars and preparing for tutorials and laboratory sessions.

In the first year, students will focus on building a strong foundation in the core engineering modules. As the programme progresses, they will also work in small teams of up to four or five people on specialised topics for projects in different modules. In the second and third year, students will be expected to work on an independent capstone project based on a current industry problem, applying the knowledge gained from the first year. They will undertake an eight-month Integrated Work Study Programme with SIAEC to complete the programme.

CAREER OPPORTUNITIES

Graduates can look forward to working in, but not limited to, the following occupational fields:

- Licensed Aircraft Engineer
- Process, Quality and Product Engineer
- Maintenance Planner
- Fleet Manager
- Technical Service/Repair Development Engineer
The Civil Engineering programme is jointly offered by SIT and the University of Glasgow. This programme will equip graduates with the necessary civil engineering professional qualifications for the building and construction industry in sustainable building and infrastructure development.

Through a heavy emphasis on project-based learning and industrial immersion, this programme aims to produce industry-ready graduates who are equipped with a high level of technical expertise to address multidisciplinary challenges, and provide technically-sound, economically-feasible and sustainable solutions to complex problems.

The BEng Civil Engineering is recognised by the Commissioner of Building Control for registration as a Resident Engineer. Graduates who have acquired eight months of full-time supervision on construction, which can include their Integrated Work Study Programme, may apply for Resident Engineer accreditation.

BEng Civil Engineering graduates may continue with the MSc Civil Engineering, that will qualify them to sit for the professional registration examinations conducted by the Professional Engineers Board of Singapore. Strong emphasis is placed on the industrial relevance in the curriculum development of the BEng Civil Engineering and MSc Civil Engineering in consultation with the government agencies and companies from the construction sector.

In the MSc Civil Engineering, students will acquire specialist training at the graduate level in structural and geotechnical engineering. The programme offers five modules on structures and five modules on geotechnics. Qualified students can opt for the project component in lieu of two modules. Students are expected to complete the programme over a normal candidature period of two years.
CIVIL ENGINEERING

CURRICULUM STRUCTURE

YEAR 1

TRIMESTER 1
- Civil Engineering and Sustainable Built Environment
- Engineering Physics
- Engineering Mathematics 1
- Civil Engineering Skills
- Statics and Structural Mechanics

TRIMESTER 2
- Graphical Communication
- Effective Communication
- Engineering Mathematics 2
- Fluid Mechanics
- Civil Engineering Materials
- Engineering Geology and Soil Mechanics

TRIMESTER 3
- Break

YEAR 2

TRIMESTER 1
- Engineering Mathematics 3
- Hydraulics and Hydrology
- Structural Analysis 1
- Geotechnical Engineering
- BIM for Civil Engineers

TRIMESTER 2
- Transportation Engineering
- Environmental Engineering
- Structural Analysis 2
- Structural Design
- Professional Communication and Development

TRIMESTER 3
- Foundation Engineering
- Construction Technology
- Design of Steel and Concrete Structures
- Seminar and Site Visit
- Design Project/Overseas Immersion Programme in Glasgow
CIVIL ENGINEERING

CURRICULUM STRUCTURE

YEAR 3
1 TRIMESTER
- Integrated Work Study Programme

2 TRIMESTER
- Integrated Work Study Programme

3 TRIMESTER
- Project Planning and Management
- Civil Engineering Practices
- Ground Engineering
- Rail Engineering
- Capstone Project

YEAR 4
3 Trimesters in Year 4 and
2 Trimesters in Year 5

Structural Engineering Focus
- Design of Steel and Composite Structures
- Design of Reinforced and Precast Concrete Structures
- Advanced Material Technology
- Design of Tall Buildings
- Structural Stability and Dynamics

Geotechnical Engineering Focus
- Advanced Geotechnical Engineering
- Shallow and Deep Foundation
- Numerical Modelling in Geotechnics
- Deep Excavation and Tunneling
- Land Reclamation and Ground Improvement

Note: The BEng Civil Engineering is jointly offered by SIT and University of Glasgow.

^ The MSc Civil Engineering is solely awarded by SIT.
CIVIL ENGINEERING

WHAT TO EXPECT

During the first year, students will divide their time between about 20 hours of lectures, tutorials, and laboratory sessions each week, learning topics such as structure mechanics, soil mechanics, fluid mechanics, and properties of construction materials. They will also get to interact with in-employment students from the SkillsFuture Work-Study Degree (WSDeg) programme, providing an opportunity for mid-career workers to upgrade their skill and knowledge. In tutorials, students will discuss ideas in depth with experienced faculty members and guest lecturers from the industry. They will learn through hands-on experiential laboratory sessions, including at the Industry Laboratories hosted by specialist companies.

As the programme progresses, students will work in small teams on projects on engineering design topics. In the second year, they will undergo a three-week Overseas Immersion Programme at the home campus of the University of Glasgow. In the third year, students will undertake an eight-month Integrated Work Study Programme with a company operating in the built environment/construction sector, integrating their work tasks with what they have learnt. They will be expected to work on their industry capstone project based on a current industry problem.

CAREER OPPORTUNITIES

Graduates of this accredited professional degree programme will meet the academic requirements for professional registration with the Professional Engineers Board. They can look forward to working in, but not limited to, the following occupational fields:

- Building and Construction
- Engineering Design Consultancy Firms
- Facility Operators
- Government Agencies
- Property Developers

INDUSTRY ADVISORY COMMITTEE

The members of the Industry Advisory Committee for this programme are:

**MR KIM YONG TIAM YOON (CHAIRPERSON)**
Deputy Chairman
Woh Hup Pte Ltd

**ER CHEW KEAT CHUAN**
Commissioner of Building Control
Building and Construction Authority

**ER PAUL FOK**
Chief Civil Engineer
Land Transport Authority

**ER DR HO NYOK YONG**
Chief Operating Officer
Samwoh Corporation Pte Ltd

**ER LAI HUEN POH**
Senior Managing Director
SJ Architecture Pte Ltd

**ER DR SHAHZAD NASIM**
Executive Group Chairman
Meinhardt Group International

Note: The BEng Civil Engineering is jointly offered by SIT and University of Glasgow.

*The MSc Civil Engineering with BEng Civil Engineering has been granted Provisional Accreditation by the Engineering Accreditation Board.*
The Computer Engineering programme with specialisation in intelligent transportation is the first-of-its-kind degree programme that offers interdisciplinary training in computer science and engineering with special focus on applying knowledge learnt to the rapidly evolving field of Intelligent Transportation Systems (ITS).

Over the years, Singapore has experienced a digital revolution that has transformed our lives in many ways. As we continue to embrace Smart Nation as the key driver of our economy, we are witnessing transformations in intelligent transport systems that agglomerate and leverage technologies such as Internet of Things, autonomous vehicles, 5G networking and smart traffic systems, among others. The degree in Computer Engineering, which was developed with support from LTA, ST Electronics, NCS and Continental Automotive, will equip you with the knowledge and skill sets in understanding how complex engineering systems such as intelligent transportation could leverage on leading-edge Information and Communications Technologies (ICT). Importantly, the programme caters to the ever-growing needs of the local industry for engineers with software development skills to develop smart solutions that run on a myriad of devices and systems, ranging from wearables to autonomous vehicles.

PROGRAMME INFORMATION

Degree Programme
- BEng Computer Engineering

Campus Location
- SIT@Dover

Eligibility
- Polytechnic Diploma Holders
- A Level/IB Diploma/NUS High School Diploma Holders
- Other Year 12 Equivalent Qualification Holders

Visit SingaporeTech.edu.sg for the list of relevant qualifications.

PROGRAMME HIGHLIGHTS

- GAIN RELEVANT WORK EXPERIENCE through the Integrated Work Study Programme (IWSP)

- INDUSTRIAL IMMERSION PROGRAMME (IIP) — Visits to Telematics, Automotive Engineering or ITS Companies in Singapore and Overseas

- Participation in DEVELOPMENT OF SIT ELECTRIC AND AUTONOMOUS DRIVING (S.E.A.D.)

Note: The Computer Engineering programme is formerly known as Telematics (Intelligent Transportation Systems Engineering).

1 This is a direct honours degree programme, subject to students meeting academic requirements.
### CURRICULUM STRUCTURE

#### YEAR 1

<table>
<thead>
<tr>
<th>TRIMESTER</th>
<th>Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Engineering Mathematics 1, Newtonian Mechanics and Waves, Electronic Circuits, Introduction to Programming, Technical Communication 1</td>
</tr>
<tr>
<td>2</td>
<td>Engineering Mathematics 2, Electricity and Magnetism, Digital Systems, Object Oriented Programming, Linear Signals and Systems</td>
</tr>
<tr>
<td>3</td>
<td>Break</td>
</tr>
</tbody>
</table>

#### YEAR 2

<table>
<thead>
<tr>
<th>TRIMESTER</th>
<th>Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sensors and Control, Embedded System Design, Instrumentation and Displays, Database and Information Systems, Career and Professional Development</td>
</tr>
<tr>
<td>2</td>
<td>Wireless Communications, RF Engineering and Electromagnetic Compatibility, Operating Systems and Automotive OS, Internet Programming, Technical Communication 2</td>
</tr>
<tr>
<td>3</td>
<td>Integrated Work Study Programme</td>
</tr>
</tbody>
</table>

Note: The Computer Engineering programme is formerly known as Telematics (Intelligent Transportation Systems Engineering).
WHAT TO EXPECT

During the first year of the programme, students will divide their time between about five lectures and tutorials each week, in addition to many practical/laboratory sessions. In tutorials, they will discuss ideas in depth with experienced faculty members and guest lecturers from the industry. Students will be expected to spend a considerable amount of time developing their own understanding of the topics covered in lectures, answering questions designed to check their understanding, and preparing for tutorials. As the programme progresses, they will also work in small teams of up to five people on more specialised topics for projects.

In the second/third year, students will undertake an eight-month Integrated Work Study Programme with a company. In the final year, they will be expected to work on their design project, based on a current industry problem, with their team members.

Note: The Computer Engineering programme is formerly known as Telematics (Intelligent Transportation Systems Engineering).
COMPUTER ENGINEERING

CAREER OPPORTUNITIES
Graduates can look forward to working in, but not limited to, the following occupational fields:

- Engineer (Design/Application/Network/Telematics/Technology Integration)
- Software Engineer
- Engineer (Intelligent Transportation Systems)
- Project Manager/Officer/Engineer
- Technology Consultant

INDUSTRY ADVISORY COMMITTEE
The members of the Industry Advisory Committee for this programme are:

**MR ANG KIM SIAH**
Senior Vice President
Mobility Business Unit
ST Electronics (Info-Comm Systems) Pte Ltd

**DR CHIN KIAN KEONG**
Chief Engineer
Land Transport Authority

**MR LO KIEN FOH**
President and Chief Executive Officer
Continental Automotive Singapore Pte Ltd

**MR TONY HENG YEW TECK**
Managing Director
SMRT Taxis

Note: The Computer Engineering programme is formerly known as Telematics (Intelligent Transportation Systems Engineering).
The Electrical Power Engineering (EPE) programme is a three-year honours degree, jointly offered by SIT and Newcastle University. As the first locally-offered, dedicated electrical power engineering undergraduate programme, the curriculum is specially customised to develop the talent pipeline in response to the workforce shortage in the power sector, while fulfilling the country’s vision of becoming a Smart Nation. As a joint programme, it leverages on the expertise and resources of both SIT and Newcastle University.

Graduates from this programme are needed in diverse sectors including electrical power generation, electrical power transmission and distribution, renewable energy, smart grid, transportation in land, air and sea, automation, and building electrical installations. Through a rigorous curriculum with strong industry focus, our graduates are both theoretically-grounded and practice-oriented. They are equipped with the necessary technical competence, tools usage knowledge, and personal skills to develop their understanding, expertise and professionalism as they progress in their careers. Having a solid foundation will also facilitate lifelong learning as they embark on their engineering career.

Graduates of this programme with good academic results and relevant working experience may also pursue the MSc Electrical and Electronic Engineering with a specialisation in Electrical Power Engineering, which meets the additional requirement needed for registration as a Professional Engineer or Chartered Engineer. This flexible arrangement allows candidates to graduate with a bachelor’s degree through an accelerated path, and to pursue the MSc Electrical and Electronic Engineering while working.

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1 This is a direct honours degree programme, subject to students meeting academic requirements.
CURRICULUM STRUCTURE

YEAR 1
- Circuit Theory
- Electronics
- Electricity and Magnetism
- Signals and Communications
- C Programming
- Engineering Mathematics 1
- Engineering Mathematics 2
- Technical Writing and Effective Communication

YEAR 2
- Automatic Control
- Electrical Systems
- Analogue Electronics
- Computer Systems and Microprocessors
- Digital Electronics
- Electromagnetic Fields and Waves
- Signals and Systems
- Project and Career Professional Development
- Accounting, Finance and Law for Engineers
- Overseas Immersion Programme
- Integrated Work Study Programme

YEAR 3
- Integrated Work Study Programme
- State Space Analysis and Controller Design
- Electrical Machines and Generators
- Power Electronics
- Generation Transmission and Distribution
- Renewable Energy Systems
- High Voltage Technology
- Individual Capstone Project
ELECTRICAL POWER ENGINEERING

POSTGRADUATE

MSc Electrical and Electronic Engineering^ (Electrical Power Engineering specialisation)

Students are required to complete 8 coursework modules and a 12 ECTS* credit project, amounting to a total of 60 credits.

- Power Systems Analysis and Control
- Power Electronic Conversion
- Electrification for Transportation and Built Environment
- Power Systems Fault Analysis and Protection
- Power Quality and Reliability
- Smart Grids and Cyber Security
- Analysis and Design of Electrical Machine Systems
- Condition Monitoring in Power Engineering
- Energy Resources, Market and Economics (Prescribed Elective)
- Professional Practices in Power Engineering (Prescribed Elective)
- Master Project

**Note:** The BEng Electrical Power Engineering is jointly offered by SIT and Newcastle University.

^ The MSc Electrical and Electronic Engineering is solely awarded by SIT, and is usually pursued on a part-time basis.

* ECTS: European Credit Transfer and Accumulation System, a credit system designed to make it easier for students to move between different countries.

WHAT TO EXPECT

During the first year of the programme, students will divide their time between about 16 hours of lectures and seven hours of tutorials each week, in addition to about five hours of practical/laboratory sessions. In tutorials, students will discuss ideas in depth with experienced faculty members and guest lecturers from the industry. Students will be expected to spend a considerable amount of time in developing their own understanding of the topics covered in lectures, answering questions designed to check their understanding, and preparing for tutorials.

As the programme progresses, students will also work in small teams of up to three people on more specialised topics for projects. In the second and third year, students will undertake a 26-week Integrated Work Study Programme with a company. Students will also get to go for a three-week Overseas Immersion Programme at the Newcastle University campus in the UK.

In the final year, students will be expected to work on their capstone project, based on a current industry problem with their team members.
ELECTRICAL POWER ENGINEERING

CAREER OPPORTUNITIES

Graduates of BEng Electrical Power Engineering or MSc Electrical and Electronic Engineering can look forward to working in, but not limited to, careers in these areas:

- Research and Development
- Utilities Companies
- Transport Industries
- Consultancy Companies
- Oil and Gas Industries
- Electrical Equipment Industries
- Electrical Power Generation, Transmission and Distribution Industries

INDUSTRY ADVISORY COMMITTEE

The members of the Industry Advisory Committee for this programme are:

- **MR BERNARD NEE (CHAIRPERSON)**
  Deputy Chief Executive
  Energy Market Authority

- **MR MIKE CHAN SIANG CHIN**
  Vice President
  Sustainable Energy Solutions
  SP Group

- **MR FOO JANG KAE**
  Senior Vice President
  SBS Transit

- **MR LIM SAY LEONG**
  Technical Director and Chint Ambassador
  Sunlight Electrical Pte Ltd

- **MR SIAH KENG BOON**
  Vice President
  R&D and Innovation
  Sembcorp Industries Ltd
ELECTRONICS AND DATA ENGINEERING

PROGRAMME INFORMATION

Degree Programme
- BEng Electronics and Data Engineering

Campus Locations
- SIT@Dover
- SIT@SP Building

Eligibility
- Polytechnic Diploma Holders
- A Level/IB Diploma/NUS High School Diploma Holders
- Other Year 12 Equivalent Qualification Holders

Visit SingaporeTech.edu.sg for the list of relevant qualifications.

PROGRAMME HIGHLIGHTS

- Focuses on SEMICONDUCTOR, ELECTRONICS, AND DATA ENGINEERING

- EIGHT-MONTH INTEGRATED WORK STUDY PROGRAMME (IWSP) in local companies or overseas under the Overseas Integrated Work Study Programme (OIWSP)

- THREE-WEEK OVERSEAS IMMERSION PROGRAMME (OIP) in Germany to visit engineering companies

The Electronics and Data Engineering degree is a four-year honours programme, jointly offered by SIT and Technical University of Munich. Combining electronics and data engineering, this programme is aimed at equipping students with the necessary skills and competencies for the emerging digital workforce. This programme encompasses a broad-based electronics and data engineering curriculum, which focuses on fundamental mathematics, physics, semiconductor technology and electronics engineering, integrated with practical applications and foundations of data science. Students will learn the fundamental principles in electronics and data engineering, including mathematics, physics, electronics, circuits, programming, databases and algorithms, Internet of Things (IoT), automation and control, machine learning, data analytics, robotics, and more.

Graduates from this programme will be equipped with core fundamentals of electronics and, at the same time, be able to adopt emerging digital technologies to revolutionise the electronics and semiconductor manufacturing industry.

1 This is a direct honours degree programme, subject to students meeting academic requirements.
ELECTRONICS AND DATA ENGINEERING

CURRICULUM STRUCTURE

YEAR 1

TRIMESTER 1
- Engineering Mathematics 1
- Programming
- Engineering Physics
- Digital Electronics
- Engineering Mathematics 2

TRIMESTER 2
- Circuit Theory
- Discrete Mathematics
- Data Structures and Algorithms
- Electricity and Magnetism
- Analogue Electronics

TRIMESTER 3
- Break
- Engineering Mathematics 3
- Circuit Design Fundamentals
- Technical Communication*

YEAR 2

TRIMESTER 1
- Engineering Mathematics 4
- Object Oriented Programming
- Semiconductor Physics
- Database and Information System
- Control Engineering
- Change Management*

TRIMESTER 2
- Digital Signal Processing
- Probability and Statistical Signal Processing
- Sensor Electronics
- Power Electronics
- Real-Time and Embedded Systems
- Basic German*

TRIMESTER 3
- Overseas Immersion Programme
- Digital Filters System Theory
- Introduction to IT Security

* These are electives.
CURRICULUM STRUCTURE

YEAR 3

1 TRIMESTER
- Data Analytics
- Machine Learning
- Semiconductor Devices
- Internet of Things
- Group Design Project
- Career and Professional Development

2 TRIMESTER
- Automation and Robotics
- Industrial Electronics
- Semiconductor Fabrication
- Bioelectronics
- Digital Communications
- Project Management and Engineering Ethics

3 TRIMESTER
- RF Electronics
- Semiconductor Device Reliability
- Reliability of Learning Systems
- Manufacturing Management
- IP and Technopreneurship or Operational Excellence

YEAR 4

1 TRIMESTER
- Integrated Work Study Programme
- Bachelor Thesis

2 TRIMESTER
- Integrated Work Study Programme
- Bachelor Thesis

* These are electives.
ELECTRONICS AND DATA ENGINEERING

WHAT TO EXPECT

A typical SIT module will be spread across a trimester with approximately two hours of lectures and two hours of tutorials each week. In addition, about 12 hours of practical or laboratory sessions are included to allow students to appreciate how theories are applied in practice. Modules under Technical University of Munich (TUM) are typically taught by TUM professors who fly into Singapore for a ‘block’ period of two to three weeks. Students will get the opportunity to focus on a particular subject, with a combination of lectures, tutorials, and laboratory sessions (where applicable).

In the second year, students will undergo an Overseas Immersion Programme to Germany, where they will have the opportunity to visit various German engineering industries and research institutes, as well as network with German professors and other international students. In the third year, students will work in small teams of up to four students on industry-relevant design projects. In the final year, students will undertake an eight-month Integrated Work Study Programme with a company. Concurrently with the IWSP, students will work on their bachelor thesis, based on an industry-related problem from their IWSP company, where they will be immersed in an applied research experience of an investigative nature and strong industrial relevance.

CAREER OPPORTUNITIES

Graduates can look forward to working in, but not limited to, the following occupational fields:

- Electrical and Electronics Engineer
- Data Engineer
- Process Engineer
- IC Production and Test Engineer
- Application Engineer
The Marine programmes, jointly offered by SIT and Newcastle University, are three-year direct honours degrees in various marine and offshore technology disciplines. Well-grounded with fundamentals in marine and offshore technology, students will hone their critical and analytical skills to be practice-oriented and industry-ready in one of these specialisations — Marine Engineering, Naval Architecture or Offshore Engineering.

Students will go through rigorous academic training and immerse themselves in the marine industry through the Integrated Work Study Programme with leading marine and offshore engineering organisations, such as Keppel O&M Ltd, Sembcorp Marine Ltd, Singapore Technologies Engineering Marine Ltd and Wärtsilä Singapore Pte Ltd.

Students will be able to take up modules which are exclusive to these joint degree programmes, such as marine classifications, which cover the rules and regulations applied during the design, production and maintenance phases of marine vessels and offshore platforms. Naval Architecture and Offshore Engineering students will learn about the engineering concepts behind the design, structure, operation, and management of ships and offshore structures. Marine Engineering students will be exposed to marine engineering systems, from the main propulsion engines to auxiliary machinery, such as power generators, pumps, heat exchangers, HVAC system, and other machinery of pneumatic or hydraulic systems.

1 This is a direct honours degree programme, subject to students meeting academic requirements.
MARINE ENGINEERING/NAVAL ARCHITECTURE/OFFSHORE ENGINEERING

CURRICULUM STRUCTURE

YEAR 1
TRIMESTER 1
- Materials in the Marine Environment
- Marine Mechanics 1A
- Engineering Mathematics
- Marine Engineering 1A
- Naval Architecture 1A

TRIMESTER 2
- Electrical Engineering
- Marine Mechanics 1B
- Engineering Mathematics and Statistics
- Marine Engineering 1B
- Naval Architecture 1B

TRIMESTER 3
- Break

YEAR 2
TRIMESTER 1
- Analytical Methods in Marine Technology
- Marine Engineering 2A
- Marine Structures 1A
- Ship Resistance
- Introduction to Business Management
- Naval Architecture 2

TRIMESTER 2
- Marine and Offshore Production Management
- Marine Engineering 2B
- Marine Structures 1B
- Marine Propulsion
- Marine Electrical Engineering
MARINE ENGINEERING/NAVAL ARCHITECTURE/OFFSHORE ENGINEERING

CURRICULUM STRUCTURE

YEAR 2

TRIMESTER 3

- Marine Transport Business
- Drilling Engineering
- Overseas Immersion Programme
- Integrated Work Study Programme

Marine Engineering
- Marine Electrical Engineering

Naval Architecture
- Marine Dynamics

Offshore Engineering
- Marine Dynamics

YEAR 3

TRIMESTER 1

- Integrated Work Study Programme

TRIMESTER 2

- Integrated Work Study Programme
- Capstone Project and Report

TRIMESTER 3

Marine Engineering
- Marine Engineering 3
- Internal Combustion Engines
- Marine Engineering Design
- Dynamic Modelling and Simulation

Naval Architecture
- Marine Structures 2
- Advanced Ship and Offshore Hydrodynamics
- Ship Design
- Advanced Resistance and Propulsion

Offshore Engineering
- Offshore Engineering Design
- Marine Structures 2
- Advanced Ship and Offshore Hydrodynamics
- Subsea and Pipeline Engineering

*These modules will be conducted over seven weeks.*
WHAT TO EXPECT

During the first year of the programme, students will divide their time between about 16 hours of lectures and seven hours of tutorials each week, in addition to about five hours of practical/laboratory sessions. In tutorials, students will discuss ideas in depth with experienced faculty members and guest lecturers from the industry. Students will be expected to spend a considerable amount of time developing their own understanding of the topics covered in lectures, answering questions designed to check their understanding, and preparing for tutorials.

As the programme progresses, students will also work in small teams of up to three people on more specialised topics for projects. In the second and third year, students will undertake a 26-week Integrated Work Study Programme with a company. Students will also get to go for a three-week Overseas Immersion Programme at the Newcastle University campus in the UK.

In the final year, students will be expected to work on their capstone project, based on a current industry problem with their team members.

CAREER OPPORTUNITIES

Graduates can look forward to working in, but not limited to, the following occupational fields:

- Maritime Port Authority
- Shipping Companies
- Shipbuilding and Rigbuilding Yards
- Republic of Singapore Navy
- Manufacturers or Suppliers
- Ship Brokering and Chartering Companies
- Marine and Offshore Original Equipment Manufacturers (OEM)
- Consultancy and Design Companies
- Renewable Energy Companies
- Classification Societies
- Oil and Gas Companies
INDUSTRY ADVISORY COMMITTEE

The members of the Industry Advisory Committee for this programme are:

**MR WONG WENG SUN (CHAIRPERSON)**
President and Chief Executive Officer  
Sembcorp Marine Ltd

**MR CHEW MEN LEONG**
Chief Marketing Officer (ST Engineering Ltd)  
Deputy President (ST Engineering Marine)

**MS WINNIE LOW**
Executive Director  
Association of Singapore Marine Industries (ASMI)

**MR KOH YONG PING**
Chief Executive  
Bureau Veritas Marine (Singapore) Pte Ltd

**MR DAVID GAN**
Director  
South Pacific Region Survey  
American Bureau of Shipping (ABS)

**MR MERVIN ONG**
Managing Director  
Wärtsilä Singapore Pte Ltd

**MR KWAN SENG FATT**
Advisor  
Nam Cheong Limited

**MR CHRIS ONG LENG YEOW (VICE-CHAIRPERSON)**
Chief Executive Officer  
Keppel Offshore & Marine Ltd

**MR ANDY TAY KIA HAN**
Head  
Naval Logistics  
Republic of Singapore Navy

**MS GINA LEE-WAN**
Partner  
Allen & Gledhill

**MS CRISTINA SAENZ DE SANTA MARIA**
Regional Manager, South East Asia, Oceania and India, Maritime  
DNV-GL

**DR THAI-LAI PHAM**
President and Chief Executive Officer  
Siemens Pte Ltd

**DR ARMIN BRUCK**
Chief Executive Officer  
Armin Bruck Advisory Board Consulting

**MR DAVID KELLY**
Executive Director  
British Chamber of Commerce, Singapore
The Mechanical Design and Manufacturing Engineering (MDME) programme is a three-year degree, jointly offered by SIT and Newcastle University. Through an interdisciplinary curriculum that combines knowledge areas from mechanical design, mechatronics, and manufacturing, the programme is developed to meet the manpower needs of the local engineering and manufacturing industries.

Students will learn fundamental principles in mechanical engineering, including statics, dynamics, mechanics, materials, control, thermodynamics and heat transfer. Following these fundamentals, students will then be exposed to a curriculum that specialises in process improvement and innovation in manufacturing. Topics covered include additive manufacturing, robotics, industrial automation, lean manufacturing, statistical process control, factory operations and production management.

Within the duration of the programme, students will also undertake the Integrated Work Study Programme at engineering companies to apply the knowledge gained, accumulate valuable work experience, and network with the industry stalwarts. As part of the IWSP, students will also work on engineering design and productivity projects, which may be carried through to capstone projects in the penultimate year of the programme. MDME graduates will be practice-oriented and work-ready to develop solutions for the engineering sector and be able to enhance processes in the manufacturing industry.

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1 This is a direct honours degree programme, subject to students meeting academic requirements.
MECHANICAL DESIGN AND MANUFACTURING ENGINEERING

CURRICULUM STRUCTURE

YEAR 1
- Engineering Mathematics 1
- Engineering Mathematics 2
- Engineering Statics
- Mechanics of Materials
- Materials for Engineers
- Fundamentals of Thermofluids
- Programming
- Circuits and Digital Electronics
- Design and Prototyping Practices
- Computer-Aided Design and Manufacturing

YEAR 2
- Engineering Dynamics
- Control of Dynamic Systems
- Design of Mechanical Systems
- Electro-Mechanical Systems Technology
- Real-Time Embedded Systems
- Applications of Thermofluids
- Developments in Materials and Processes
- Materials and Manufacturing
- Lean Manufacturing and Six Sigma
- Engineering Economics and Project Management
- Finance, Law and Standards for Engineers
- Technical Writing and Effective Communication
- Career and Professional Development
- Overseas Immersion Programme
- Integrated Work Study Programme

YEAR 3
- Integrated Work Study Programme
- Engineering Systems Modelling and Simulation
- Mechatronics Systems
- Robotics
- Industrial Automation
- Manufacturing Systems Management
- Capstone Project
WHAT TO EXPECT

During the first year of the programme, students will divide their time between about five lectures and tutorials each week, in addition to about two to three practical/laboratory sessions. During tutorials, students will discuss ideas in depth with experienced faculty members and guest lecturers from the industry. Students will be expected to spend a considerable amount of time developing their own understanding of the topics covered in lectures, answering questions designed to check their understanding, and to prepare for tutorials.

As the programme progresses, students will also work in small teams on more specialised topics for the projects. In the second and third years, students will undertake a 26-week Integrated Work Study Programme with a company. Students will also get to go for a three-week Overseas Immersion Programme at the Newcastle University campus in the UK.

In the final year, students will be required to work on their individual capstone project, that will typically be based on current industry problems in engineering.

CAREER OPPORTUNITIES

Graduates can look forward to working in, but not limited to, the following occupational fields:

- Engineer (Mechanical/ Mechatronics/ Manufacturing/ Design/QA/R&D)
- Consultant in Commercial and Public Sectors
- Engineering Project Manager

INDUSTRY ADVISORY COMMITTEE

The members of the Industry Advisory Committee for this programme are:

**MR PETER TAN (CHAIRPERSON)**
Co-Chairman
Advanced Remanufacturing and Technology Centre (ARTC)
Agency for Science Technology and Research

**MR WILLSON DENG**
Chief Executive Officer
Arcstone Pte Ltd

**DR LIM CHEE WANG**
R&D Manager
Akribis Systems Pte Ltd

**MR JEFF TANG**
Chief Technical Officer
HOPE Technik

**MR SURYANARAYANA TUMULURI**
Head of Manufacturing Design
Digital Factory, Siemens
The Mechanical Engineering programme is jointly offered by SIT and the University of Glasgow. This three-year honours degree programme is designed to meet growing manpower needs in many disruptive digital technologies for key industry sectors in Singapore, including healthcare engineering, automation/robotics, and smart designs using 3D printing and digital design tools for manufacturing and maritime.

Students will be equipped with the knowledge, understanding and skills for mechanical engineering. They will also acquire advanced knowledge in Industrial Internet of Things (IIoT), data analytics, healthcare systems engineering and standards, digital designs, and robotics/automation, through project-based, multidisciplinary learning and direct industrial immersion. Students will have a choice of specialisation in Design or Mechatronics.

Under the Design specialisation, students will learn the concepts of digital design through modules in additive engineering, engineering materials technology, mechanical design, and microelectronics for engineering products. Students in the Mechatronics specialisation will learn the special skill sets in IIoT, used for automation and robotics, unmanned systems, co-bot design and build, as well as machine learning.

Graduates from this programme will be equipped with sound principles in mechanical engineering, specialising in Design or Mechatronics, as well as deep knowledge in digitalisation. They will be practice-oriented and innovative individuals with the right skill sets for the fast-growing digital economy.

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1 This is a direct honours degree programme, subject to students meeting academic requirements.
## CURRICULUM STRUCTURE

### YEAR 1

<table>
<thead>
<tr>
<th>TRIMESTER</th>
<th>Courses</th>
</tr>
</thead>
</table>
| 1         | Engineering Mathematics 1  
           | Fundamentals of Programming  
           | Engineering Mechanics  
           | Engineering Design Graphics  
           | Fundamentals of Electronics and Circuits  
           | Digital Engineering Skills |
| 2         | Engineering Mathematics 2  
           | Dynamics  
           | Control  
           | Effective Communication  
           | Sensor and Signal Technology  
           | Materials and Manufacturing Technology |
| 3         | Break' |

### YEAR 2

<table>
<thead>
<tr>
<th>TRIMESTER</th>
<th>Courses</th>
</tr>
</thead>
</table>
| 1         | Engineering Mathematics 3  
           | Mechanics of Solids  
           | Thermodynamics and Heat Transfer |
| 2         | Design Specialisation  
           | Mechatronics Specialisation  
           | Modelling and Simulation  
           | Career and Professional Development |

* | Design Specialisation | Mechatronics Specialisation |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Design and Manufacture 1</td>
<td>Automation and Robotics</td>
</tr>
<tr>
<td>Mechanics of Mechanisms</td>
<td>Real Time Computing Systems</td>
</tr>
</tbody>
</table>

* | Design Specialisation | Mechatronics Specialisation |
|----------------------------|----------------------------|
| Fluid Mechanics  
           | Electronic System Design |
| Mechanical Design  
           | Mechatronics Design |
| Additive Engineering  
           | Software Engineering |

*Student-Volunteered Projects, Student-Hired Projects, External Projects with Faculty, Industry Attachment, Industry Interactions/Workshops, Service Learning.*
## CURRICULUM STRUCTURE

### YEAR 2

<table>
<thead>
<tr>
<th>TRIMESTER</th>
<th>Courses</th>
</tr>
</thead>
</table>
| 3         | Integrated Work Study Programme  
Capstone Project |

### YEAR 3

<table>
<thead>
<tr>
<th>TRIMESTER</th>
<th>Courses</th>
</tr>
</thead>
</table>
| 1         | Integrated Work Study Programme  
Capstone Project |
| 2         | Capstone Project |
| 3         | Capstone Project  
Professional Engineering Practice  
Industrial Internet of Things and Data Analytics 2 |

### Design Specialisation
- Microelectronics for Engineering Products
- Engineering Materials Technology

### Mechatronics Specialisation
- Unmanned Systems
- Digital Signal Processing
WHAT TO EXPECT

During the first year of the programme, students will divide their time between about six lectures and tutorials each week, in addition to about two to three practical/laboratory sessions. This varies across trimesters, where students can expect a different mix of instructions and delivery methods. On top of having regular consultations with faculty staff, students will be expected to spend a considerable amount of time developing their own understanding of the topics covered in lectures, answering questions designed to check their understanding, preparing for tutorials, and sitting for continuous assessments during the trimesters.

As the programme progresses, students will also work in small teams of up to five people on more specialised topics for projects. Laboratory facilities are located mainly at the SIT@NP Building, while some larger machineries are located at SIT@Dover. There are also specialised project rooms at the SIT@NP Building, catered for computing and hardware development work.

In the second year, students will deepen their skill sets in their chosen area of specialisation, in either Design or Mechatronics. Students will also get to experience a three-week Overseas Immersion Programme at the University of Glasgow, Scotland. In the first two trimesters of the third year, students will undertake an eight-month Integrated Work Study Programme with a company.

In the final year, the specialised knowledge gained will culminate to their individual capstone project, based on a current industry problem.

CAREER OPPORTUNITIES

Graduates can look forward to working in, but not limited to, the following occupational fields:

- R&D Mechanical Design Engineer
- Development Engineer (Mechanical Design)
- Mechatronics Engineer
- Software Engineer
- Project Engineer
- Automation Engineer (CAD/Automation)
The Mechatronics Systems programme jointly offered by SIT and DigiPen Institute of Technology Singapore encompasses two complementary fields of study, i.e. Mechatronics and Systems Engineering. Mechatronics is a multidisciplinary branch of engineering that focuses on mechanical engineering, electronics, control and automation, and software technology, in order to design, develop, put into operation and optimise systems. Systems engineering is an interdisciplinary field of engineering and engineering management that focuses on how to design, integrate, and manage complex systems over their life cycles.

Students from this programme will acquire multidisciplinary engineering knowledge while grounded with systems-level engineering management know-how, placing them in a competitive advantage and flexibility to move across industries upon graduation.
# Mechatronics Systems

## Curriculum Structure

### Year 1

**Trimester 1**
- Computer Environment
- Calculus and Analytic Geometry 1
- Computer Aided Design
- Engineering Fabrication
- High-Level Programming 1
- Composition

**Trimester 2**
- Systems Engineering Project 1
- Calculus and Analytic Geometry 2
- Digital Electronics 1
- High-Level Programming 2
- Systems and Software Engineering
- Interpersonal and Work Communication

**Trimester 3**
- Break

### Year 2

**Trimester 1**
- Systems Engineering Project 2
- Calculus and Analytic Geometry 3
- Motion Dynamics
- Embedded Microcontroller Systems
- Systems and Project Management
- The Engineer and Society

**Trimester 2**
- Systems Engineering Project 3
- Waves, Optics and Thermodynamics
- Electric Circuits
- ElectroMechanical Design
- Requirement Engineering and Systems Architecture
- Career Planning and Development

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Note: The Mechatronics Systems programme is formerly known as Systems Engineering (ElectroMechanical Systems).
MECHATRONICS SYSTEMS

CURRICULUM STRUCTURE

YEAR 1
1 TRIMESTER
- Capstone Project 1
- Probability and Statistics
- Control Systems
- Data Structures
- Model-Based Systems Engineering
- Systems Modelling and Simulation

2 TRIMESTER
- Capstone Project 2
- Robotics
- Risk and Decision Analysis
- Systems Integration, Verification and Validation
- Large Scale Systems

YEAR 2
1 TRIMESTER
- Overseas Immersion Programme
- Linear Algebra
- Differential Equations
- Electricity and Magnetism
- Digital Electronics 2
- Modern C++ Design Patterns

2 TRIMESTER
- Break

YEAR 3
1 TRIMESTER
- Integrated Work Study Programme

2 TRIMESTER
- Integrated Work Study Programme

3 TRIMESTER
- Linear Algebra
- Differential Equations
- Electricity and Magnetism
- Digital Electronics 2
- Modern C++ Design Patterns

Note: The Mechatronics Systems programme is formerly known as Systems Engineering (ElectroMechanical Systems).
MECHATRONICS SYSTEMS

WHAT TO EXPECT

In the first year, students will focus on foundation studies in mathematics, computing, electrical and electronic engineering, mechanical engineering and systems engineering. They will be expected to develop their own understanding of the topics and apply the knowledge learnt through working on hands-on project assignments.

In the second year, students will undertake core modules with additional physics modules. They will spend their last trimester in DigiPen’s USA campus under the Overseas Immersion Programme, attending lectures and laboratory modules delivered by the campus faculty. Students will undergo their eight-month Integrated Work Study Programme with a company in the third year. In the final year, they will continue with modules in advanced engineering studies and undertake team-based capstone projects, enabling them to apply what they have learnt to solve real industry problems, brought back from their IWSP companies.

CAREER OPPORTUNITIES

Graduates can look forward to working in, but not limited to, the following occupational fields:

- Systems Engineer
- Project Engineer
- Mechatronics Engineer
- Design Engineer
- Software Engineer

INDUSTRY ADVISORY COMMITTEE

The members of the Industry Advisory Committee for this programme are:

**MR SUDESH K KRISHNAMOORTHY**
Cloud Solution Specialist
IBM Software
ASEAN IBM

**MR SIMON KUIK SOW HONG**
Vice President/Head Research and Development
Sembcorp Marine Ltd

**MR OH SIN HIN**
Principle Manager
Systems Assurance and Integration Division
Land Transport Authority

**MR ALLEN ONG**
R&D Manager
Hewlett Packard Enterprise (Singapore) Pte Ltd

**ASSOCIATE PROF TOK ENG SOON**
Department of Physics
National University of Singapore

**DR VICTOR WONG**
Head
Facilities Management Biopolis
Agency for Science Technology and Research

Note: The Mechatronics Systems programme is formerly known as Systems Engineering (ElectroMechanical Systems).
Robotics Systems is a specialised engineering programme that focuses on the design and development of service/field robotic systems. The programme aims to fulfil the anticipated demand for robotics engineers, as automation moves out from the factory shop floor to service their human counterparts in various field applications. The integration of multiple engineering disciplines, via systems engineering through its project-based pedagogy, is a unique feature of the programme. Software and Artificial Intelligence (AI) are used as integrative elements that connect multiple mechatronics elements together to form a complete robotic system.

The Robotics Systems curriculum is centred around the design and development of deployable robotic systems. Robotics modules deal with the actual design and development of mechatronics sub-systems, while systems engineering modules look at the efficient execution of the robotics systems development process. Software development modules integrate software/firmware sub-systems, including artificial intelligence algorithms, to generate intelligent behaviours.

A significant amount of project-based learning activities that connect academic knowledge and skills with real world applications has been incorporated into the programme. These projects allow students to simultaneously experience systems and software engineering, project management, as well as systemic integration of knowledge from multiple disciplines. The 12-month Integrated Work Study Programme and the capstone project will serve as the culmination and integrative experience of the programme.

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1 This is a direct honours degree programme, subject to students meeting academic requirements.
CURRICULUM STRUCTURE

YEAR 1

1 TRIMESTER
- Project 1
- C Programming
- Calculus 1
- Foundational Mechanical Engineering
- Interpersonal and Work Communication

2 TRIMESTER
- Project 2
- C++ Programming
- Calculus 2
- Foundational Electrical and Electronics Engineering
- Systems and Software Engineering

3 TRIMESTER
- Systems Engineering Project 1
- Computer Organisation and Architecture
- Business Analysis and Requirements
- Engineering

YEAR 2

1 TRIMESTER
- Project 3
- Embedded Systems Programming
- Linear Algebra
- Systems Engineering and Project Management
- System Architecture and Design

2 TRIMESTER
- Project 4
- Computer Operation Systems, Communications and Networking
- Discrete Mathematics
- Technical Report Writing and Communication
- System Integration, Validation and Verification

3 TRIMESTER
- Systems Engineering Project 2
- Statistics and Probability
- Career and Professional Development
**CURRICULUM STRUCTURE**

**YEAR 3**
- Integrated Work Study Programme

**YEAR 4**
- Capstone Project
- Sensing
- Artificial Intelligence and Machine Learning
- Manipulators, End-Effectors and Actuators
- Human-System Integration

- Capstone Project
- Navigation
- AI Robotics
- Computer Vision
- The Engineer and Society

**WHAT TO EXPECT**

During the first year of the programme, students will commence with the study of foundational topics from different engineering disciplines. For their second year, they will undertake the study of intermediate topics and build up more transferrable skills. As the programme progresses, students will work in teams on more specialised topics. Students will embark on a 12-month Integrated Work Study Programme with a company in their third year. For their final year, students will continue with their specialised modules, undertake core robotics topics, as well as work on their capstone project.

Students will be expected to spend a considerable amount of time developing proficiency in relevant topics required for robotic development. They are expected to attempt all assessments designed to deepen their understanding of different engineering topics. Faculty members will be present to guide students when necessary.

**CAREER OPPORTUNITIES**

Graduates can look forward to working in, but not limited to, the following occupational fields:

- Robotics Engineer
- Robotics Systems Integrator
- Robotics Automation Engineer
- Software Engineer
- Mechatronics
- Systems Engineer
Developed in consultation with the Building and Construction Authority (BCA) Singapore, the Sustainable Infrastructure Engineering (SIE) (Building Services) programme encompasses all the necessary engineering disciplines that are required for the building services engineering industries in Singapore. The programme liaises closely with the agencies' initiative in the Industry Transformation Map for the Built Environment Cluster. This programme focuses on training engineers for Integrated Digital Delivery and green building capabilities which demands 80,000 personnel by 2025.

Students will be groomed to be both practice-orientated and industry-ready in three key areas of Efficient Energy Management, Building Services in mechanical, electrical and plumbing (MEP), and Building Information Modelling. For Building Services in MEP, students will gain the competencies in Heating, Ventilation and Air Conditioning (HVAC), indoor environment quality, acoustic, lighting, fire management, and sustainable building engineering. They will also have the opportunity to obtain professional certifications in Green Mark, Fire Services Safety Management, as well as Workplace Safety and Health.

Students have the option to graduate with a BEng Sustainable Infrastructure Engineering (Building Services) (based on six trimesters of study and three trimesters of Integrated Work Study Programme) and/or a MEngTech Sustainable Infrastructure Engineering (Building Services) (based on two trimesters of study). Graduates with the MEngTech Sustainable Infrastructure Engineering (Building Services) qualification will be eligible for future registration as a Professional Engineer (PE) (Singapore) or Chartered Engineer (UK and Commonwealth countries). The PE registration is essential for engineers to design mechanical and electrical systems, and practise in the building services engineering industries in Singapore.

1 This is a direct honours degree programme, subject to students meeting academic requirements.
SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

CURRICULUM STRUCTURE

The programme will produce:

- Engineers who are specialised in HVAC, Sustainable Building Engineering and BIM.
- Green Mark-informed engineers.
- Engineers who meet the industry standard in Fire Services Management and Workplace Safety and Health.
- Specialists with knowledge in energy optimisation, project management, change management, construction management and systems engineering at the MEngTech Sustainable Infrastructure Engineering (Building Services) level.

YEAR 1

TRIMESTER 1
- Mechanics of Engineering Materials
- Engineering Mathematics 1
- C Programming
- Measurements and Sensor Technology
- Effective Communication

TRIMESTER 2
- Dynamics of Machines
- Engineering Mathematics 2A
- Heat Exchanger and Heat Pump
- Engineering Drawing for Building Services
- Materials Selection for Engineering Structure

TRIMESTER 3
- Break

YEAR 2

TRIMESTER 1
- Engineering Mathematics 2B
- Fluid Mechanics
- Electrical Systems
- Sustainable Building Engineering
- Mechanics of Solids
SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

YEAR 2

TRIMESTER 1
- Engineering Mathematics 3
- Land Transport Discovery Course
- Building Physics
- BIM for Mechanical, Electrical, and Plumbing Design Studio
- HVAC 1
- Career and Professional Development

TRIMESTER 2
- HVAC 2
- Building Energy Simulations and Assessment
- Facility Management using BIM
- Building Services Engineering Discovery
- Design Project 1

TRIMESTER 3
- Integrated Work Study Programme

YEAR 3

TRIMESTER 1
- Fire Engineering Fundamentals
- Fire Safety Management
- Automation and Control in Building
- Work Place Safety and Health
- Design Project 2

TRIMESTER 2
- Capstone Project 1
- Construction Management using BIM
- Project Management
- Acoustic Engineering
- Lighting Technology for Building Services

TRIMESTER 3
- Capstone Project 2 (Continue from 1)
- Indoor Environmental Quality Engineering
- Change Management
- Manufacturing Technology
- Structure Vibration and Control

*Year 4, Trimesters 2 and 3 are taken at the MEngTech Sustainable Infrastructure Engineering (Building Services) level.
SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

PROFESSIONAL CERTIFICATIONS

Green Mark Certification
The Green Mark certification is required for all buildings in Singapore by 2020, implying a need for well-qualified engineers with knowledge of green building examination and authorisation.

Fire Safety Management Course
This course is designed for individuals aspiring to be Fire Safety Managers (FSM). Key components of the course include emphasising the importance of fire safety regulations, and the operation and maintenance of various fire protection systems and fire-fighting equipment. At the end of the course, participants would have adequate fire safety knowledge to fulfil the roles and responsibilities of a FSM, before they are qualified to be appointed as FSMs.

REGIONAL IMMERSION IN SUSTAINABLE ENGINEERING (RISE)
Aimed to enrich students’ learning experiences, the programme includes visits to key infrastructure facilities and projects in the region, and enables students to gain first-hand experience with key players who are working on various phases of a project, such as those in design and construction.

WHAT TO EXPECT
In the first year, students will divide their time between about two hours of lectures and tutorials each week under the guidance from experienced faculty members. Domain industry experts are invited to give guest lectures in specific, related topics. Students are expected to deepen their understanding of the topics covered in lectures with tutorials and continual assessment such as assignments, quizzes and project work.

In the second year, the laboratory sessions will commence. As the programme progresses, students will work in teams on more specialised topics, such as discovery laboratory in applied research activities, design projects, and engineering specialisation modules. In the third year, they will undertake a one-year Integrated Work Study Programme with a company. They are also expected to follow up with an individual design project, based on a current industry problem during the final trimester of their undergraduate studies.

CAREER OPPORTUNITIES
Graduates can look forward to working in, but not limited to, the following occupational fields:

- BIM Manager
- Sustainable Building Consultant
- Facility Manager (Mechanical)
- Design Engineer (with focus on HVAC or other relevant Mechanical areas)
- Building Construction (Mechanical) Engineer
The Sustainable Infrastructure Engineering (SIE) (Land) programme is a multidisciplinary degree programme encompassing several fundamental engineering disciplines.

Students will go through rigorous academic training and have the opportunity to immerse themselves in the land transport industry through work stints with established organisations, such as LTA, SMRT, SBS Transit, Singapore Technologies, Railway Original Equipment Manufacturers (OEMs) and suppliers, etc.

With the aim to groom students to be both practice-oriented and industry-ready, exclusive modules, such as Railway Engineering and Total Preventive Maintenance, will be taught over the course of the programme. In addition, the unique curriculum will enable students to attain professional Non-Destructive Testing (NDT) certification for inspection methods, which is highly sought after in the industry.

Students have the option to graduate with a BEng Sustainable Infrastructure Engineering (Land) (based on six trimesters of study and three trimesters of Integrated Work Study Programme) and/or a MEngTech Sustainable Infrastructure Engineering (Land) (based on two trimesters of study). Graduates with the MEngTech Sustainable Infrastructure Engineering (Land) qualification will be eligible for future registration as a Professional Engineer (PE) (Singapore) or Chartered Engineer (UK and Commonwealth countries). The PE registration is essential for engineers to design mechanical and electrical systems and practise in the engineering industries in Singapore.

1 This is a direct honours degree programme, subject to students meeting academic requirements.
## SUSTAINABLE INFRASTRUCTURE ENGINEERING (LAND)

### CURRICULUM STRUCTURE

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1 TRIMESTER</th>
<th>2 TRIMESTER</th>
<th>3 TRIMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR 1</td>
<td>Mechanics of Engineering Materials</td>
<td>Dynamics of Machines</td>
<td>Break</td>
</tr>
<tr>
<td></td>
<td>Engineering Mathematics 1</td>
<td>Engineering Mathematics 2A</td>
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<tr>
<td></td>
<td>C Programming</td>
<td>Heat Exchanger and Heat Pump</td>
<td></td>
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<tr>
<td></td>
<td>Measurements and Sensor Technology</td>
<td>Engineering Design Graphics</td>
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<tr>
<td></td>
<td>Effective Communication</td>
<td>Materials Selection for Engineering Structure</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEAR 2</th>
<th>1 TRIMESTER</th>
<th>2 TRIMESTER</th>
<th>3 TRIMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR 2</td>
<td>Engineering Mathematics 2B</td>
<td>Land Transport Discovery*</td>
<td>Railway Signalling and Communications</td>
</tr>
<tr>
<td></td>
<td>Fluid Machineries</td>
<td>Marine Transport Discovery*</td>
<td>Rolling Stock and Permanent Way Systems</td>
</tr>
<tr>
<td></td>
<td>Engineering Electronics and Instrumentation</td>
<td>Aerospace Engineering Discovery*</td>
<td>NDT 2</td>
</tr>
<tr>
<td></td>
<td>NDT 1</td>
<td>Career and Professional Development</td>
<td>Total Preventive Maintenance</td>
</tr>
<tr>
<td></td>
<td>Mechanics of Solids</td>
<td></td>
<td>Lean and Quick Response Repair</td>
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<td></td>
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<td></td>
<td>Design Project 1</td>
</tr>
</tbody>
</table>

* Supplemented by laboratory work (four laboratories for each discovery module). These modules aim to provide an introduction to the performance of various engineering concepts/devices (land, sea, and air) and their maintenance and service needs.
## CURRICULUM STRUCTURE

### YEAR 3

1-3 TRIMESTER
- Integrated Work Study Programme

### YEAR 4

1 TRIMESTER
- Railway Supervisory Control and Data Acquisition
- Safety Standards/Legislation/Best Practices
- Statistical Process Control
- Manufacturing Engineering
- Design Project 2

2 TRIMESTER
- Capstone Project
- NDT 3
- High Performance Alloys
- Project Management
- Remanufacturing Systems Management

3 TRIMESTER
- Capstone Project
- Change Management
- Systems Engineering
- Electrical Power and Propulsion
- Structure Vibration and Control

*Year 4, Trimesters 2 and 3 are taken at the MEngTech Sustainable Infrastructure Engineering (Land) level.

### REGIONAL IMMERSION IN SUSTAINABLE ENGINEERING (RISE)

RISE is a unique programme which aims to enrich students’ learning experiences. Participants get to visit key infrastructure facilities and projects in the region, as well as gain first-hand experience communicating with engineers, designers, and operators who are working on various phases of a project, such as those in design and construction.
WHAT TO EXPECT
In the first year, students will divide their time between about two hours of lectures and tutorials each week, under the guidance of experienced faculty members. Domain industry experts are invited to give guest lectures in specific, related topics. Students are expected to spend a considerable amount of time developing their own understanding of the topics covered in lectures, and attempting questions designed to deepen their understanding in tutorials. Students will also be offered a chance to go for a Regional Immersion Sustainable Engineering (RISE) programme in their last trimester, for overseas exposure to industries in sustainability.

In the second year, the laboratory sessions will commence. As the programme progresses, students will work in teams on more specialised topics, such as discovery laboratory in applied research activities, design projects, and engineering specialisation modules. In the third year, they will undertake a one-year Integrated Work Study Programme with a company. They are also expected to follow up with an individual design project, based on a current industry problem, during the final trimester of their undergraduate studies.

CAREER OPPORTUNITIES
Graduates can look forward to careers in various land transport organisations, such as:
- LTA
- SMRT
- SBS Transit
- Railway Original Equipment Manufacturers (OEMs) and Suppliers
- Singapore Technologies

INDUSTRY ADVISORY COMMITTEE
The members of the Industry Advisory Committee for the Sustainable Infrastructure Engineering (Building Services) and (Land) programmes are:

**ER CHUA CHONG KHENG (CHAIRPERSON)**
Deputy Chief Executive (Infrastructure & Development)
Land Transport Authority

**MR ANG KIAN SENG**
Group Director
Technology Development
Building Construction Authority

**DR SAMUEL CHAN WAI**
Group Director
Land Transport Authority

**MR GAN BOON JIN**
Chief Technology Officer
SMRT Corporation Ltd

**DR KOH YONG KHIANG**
Vice President/Chief Engineer
Engineering Analysis
ST Engineering Land Systems Ltd

**MR LEONG YIM SING**
Senior Vice President
Rail Engineering
SBS Transit Ltd

**MR LOOI TEIK SOON**
Dean
LTA Academy
Land Transport Authority

**MR LOW LOKE KIONG VINCENT**
Vice President and Business Development Director
G-Energy Global Pte Ltd

**MR TAN PHAY PING**
Managing Director
Building System and Diagnostics Pte Ltd

**ER TEO TIONG YONG**
Director of Public Projects
JTC Corporation
SIT adopts an aptitude-based approach in assessing applicants for admission, by considering the following criteria:

**MEETING THE MINIMUM ACADEMIC REQUIREMENTS**

- Diploma from any local polytechnic
- GCE A Level
- International Baccalaureate Diploma (IB)
- NUS High School Diploma
- Diploma from other institutions
- Other Year 12 Equivalent Qualifications

**INTERVIEW PERFORMANCE**

All shortlisted applicants will be assessed through interviews. For specific degree programmes, applicants may have to submit portfolios or essays, and/or be assessed through written or technical tests.

*To help us understand the academic pathway you have taken, please fill in the details of both your entry qualification (i.e. Polytechnic Diploma/A Level/IB or equivalent Year 12 results) and your GCE O Level, or equivalent Year 10 results/ITE (Nitec and Higher Nitec) when you apply for admission to SIT. SIT accepts applicants who did not sit for their GCE O Level examination and have come through other forms of secondary or post-secondary education, such as the Polytechnic Foundation Programme (PFP).*
### Admission Requirements

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Aerospace Engineering</th>
<th>Aircraft Systems Engineering</th>
<th>Civil Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diploma from Any Local Polytechnic</strong></td>
<td>Completed a local polytechnic diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</td>
<td>Completed a relevant local polytechnic diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</td>
<td>Completed a local polytechnic diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</td>
</tr>
</tbody>
</table>
| **GCE A Level**                                    | Obtained passes in at least two H2 subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL) requirements.  
- A good pass in H1/H2 Mathematics  
- A good pass in H1/H2 Physics | Obtained passes in at least two H2 subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL) requirements. | Obtained passes in at least two H2 subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL) requirements. |
| **International Baccalaureate Diploma (IB)**       | Obtained a minimum grade five for at least two HL and one SL subjects and the IB Diploma, while satisfying the Mother Tongue Language (MTL) requirements.  
- A good pass in SL/HL Mathematics  
- A good pass in SL/HL Physics | Obtained a minimum grade five for at least two HL and one SL subjects and the IB Diploma, while satisfying the Mother Tongue Language (MTL) requirements. | Obtained a minimum grade five for at least two HL and one SL subjects and the IB Diploma, while satisfying the Mother Tongue Language (MTL) requirements. |
| **NUS High School Diploma**                        | Obtained the NUS High School Diploma, while satisfying the Mother Tongue Language (MTL) requirements. | | |
| **Diploma from Other Institutions**                | Each application will be considered on a case-by-case basis. | BCA diploma holders in Construction Engineering may apply. | |
| **Other Year 12 Equivalent Qualifications**        | Completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission. | | |

Note:
- Please refer to [SingaporeTech.edu.sg](http://SingaporeTech.edu.sg) for the detailed list of relevant diplomas.
- Graduates of the BEng Civil Engineering may choose to continue taking the MSc Civil Engineering.
- For up-to-date information, please refer to [SingaporeTech.edu.sg](http://SingaporeTech.edu.sg).
# ADMISSION REQUIREMENTS

<table>
<thead>
<tr>
<th>QUALIFICATION</th>
<th>Computer Engineering</th>
<th>Electrical Power Engineering*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIPLOMA FROM ANY LOCAL POLYTECHNIC</strong></td>
<td>Completed a local polytechnic diploma.</td>
<td>Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</td>
</tr>
<tr>
<td>Applicants with relevant engineering background (i.e. Diploma in Electrical and Electronics Engineering, Computer Engineering and Information Technology), may apply for exemption from modules of up to a maximum of two trimesters.</td>
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<td></td>
</tr>
<tr>
<td>For applicants with non-relevant diplomas, exemption from modules will be considered on a case-by-case basis.</td>
<td></td>
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</tr>
<tr>
<td><strong>GCE A LEVEL</strong></td>
<td>Obtained passes in at least two H2 subjects and offered General Paper (GP) or Knowledge &amp; Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL) requirements.</td>
<td>Obtained passes in at least two H2 subjects and offered General Paper (GP) or Knowledge &amp; Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL) requirements.</td>
</tr>
<tr>
<td><strong>INTERNATIONAL BACCALAUREATE DIPLOMA (IB)</strong></td>
<td>Obtained a minimum grade five for at least two HL and one SL subjects and the IB Diploma, while satisfying the Mother Tongue Language (MTL) requirements.</td>
<td>Obtained a minimum grade five for at least two HL and one SL subjects and the IB Diploma, while satisfying the Mother Tongue Language (MTL) requirements.</td>
</tr>
<tr>
<td><strong>NUS HIGH SCHOOL DIPLOMA</strong></td>
<td>Obtained the NUS High School Diploma, while satisfying the Mother Tongue Language (MTL) requirements.</td>
<td></td>
</tr>
<tr>
<td><strong>DIPLOMA FROM OTHER INSTITUTIONS</strong></td>
<td>BCA diploma holders in the following fields of study may apply:</td>
<td>Each application will be considered on a case-by-case basis.</td>
</tr>
<tr>
<td></td>
<td>- Construction Engineering</td>
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<td></td>
<td>- Construction Information Technology</td>
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<td></td>
<td>- Electrical Engineering and Clean Energy</td>
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<tr>
<td></td>
<td>- Mechanical Engineering (Green Building Technology)</td>
<td></td>
</tr>
<tr>
<td><strong>OTHER YEAR 12 EQUIVALENT QUALIFICATIONS</strong></td>
<td>Completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.</td>
<td></td>
</tr>
</tbody>
</table>

Note:
*Graduates of the BEng Electrical Power Engineering may choose to continue taking the MSc Electrical and Electronic Engineering.
For up-to-date information, please refer to [SingaporeTech.edu.sg](https://www.SingaporeTech.edu.sg).
# ADMISSION REQUIREMENTS

<table>
<thead>
<tr>
<th>QUALIFICATION</th>
<th>Electronics and Data Engineering&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Marine Engineering</th>
<th>Mechanical Design and Manufacturing Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIPLOMA FROM ANY LOCAL POLYTECHNIC</strong></td>
<td>Completed a local polytechnic diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</td>
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<tr>
<td></td>
<td>Applicants with strong interest and proficiency in Mathematics and Physics are encouraged to apply.</td>
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</tr>
<tr>
<td><strong>GCE A LEVEL</strong></td>
<td>Obtained a pass in General Paper (GP) or Knowledge &amp; Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL)&lt;sup&gt;4&lt;/sup&gt; requirements.</td>
<td>Obtained passes in at least two H2 subjects and offered General Paper (GP) or Knowledge &amp; Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL) requirements.</td>
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</tr>
<tr>
<td></td>
<td>- A pass in H2 Mathematics</td>
<td>- A good pass in H1/ H2 Mathematics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- A pass in H2 Science subject (Biology, Chemistry or Physics)</td>
<td>- A good pass in H1/ H2 Physics</td>
<td></td>
</tr>
<tr>
<td><strong>INTERNATIONAL BACCALAUREATE DIPLOMA (IB)</strong></td>
<td>Obtained the IB Diploma, while satisfying the Mother Tongue Language (MTL)&lt;sup&gt;4&lt;/sup&gt; requirements.</td>
<td>Obtained a minimum grade five for at least two HL and one SL subjects and the IB Diploma, while satisfying the Mother Tongue Language (MTL) requirements.</td>
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<tr>
<td></td>
<td>- A pass in one HL Mathematics</td>
<td>- A good pass in SL/ HL Mathematics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- A pass in one HL Science subject (Biology, Chemistry or Physics)</td>
<td>- A good pass in SL/ HL Physics</td>
<td></td>
</tr>
<tr>
<td><strong>NUS HIGH SCHOOL DIPLOMA</strong></td>
<td>Obtained the NUS High School Diploma, while satisfying the Mother Tongue Language (MTL) requirements.</td>
<td></td>
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</tr>
<tr>
<td><strong>DIPLOMA FROM OTHER INSTITUTIONS</strong></td>
<td>Each application will be considered on a case-by-case basis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OTHER YEAR 12 EQUIVALENT QUALIFICATIONS</strong></td>
<td>Completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.</td>
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</tr>
</tbody>
</table>

Note:

<sup>a</sup>GCE A Level/IB applicants need to fulfil the language requirements as stipulated by the German Higher Education System. GCE A Level applicants must have taken two language subjects, out of which one must be at H1 to fulfil the language requirements as stipulated by the German Higher Education System. If you have been exempted from taking MTL for your GCE A Level, you can retake the subject to fulfil the language requirements. Additionally, there are specific conditions which IB applicants are required to fulfil (details are listed on the website). For further enquires on the various requirements, please contact TUM Asia Admission Office at admission@tum-asia.edu.sg.

For up-to-date information, please refer to SingaporeTech.edu.sg.
## ADMISSION REQUIREMENTS

<table>
<thead>
<tr>
<th>QUALIFICATION</th>
<th>Mechanical Engineering</th>
<th>Mechatronics Systems</th>
<th>Robotics Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIPLOMA FROM ANY LOCAL POLYTECHNIC</strong></td>
<td>Completed a local polytechnic diploma. Subject to approval, diploma applicants may be granted module exemptions based on the modules taken during their diploma.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GCE A LEVEL</strong></td>
<td>Obtained passes in at least two H2 Level subjects and offered General Paper (GP) or Knowledge &amp; Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL) requirements.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| | - A good pass in H1/H2 Mathematics  
  - A good pass in H1/H2 Physics | - A pass in one of the following H2 subjects (Mathematics or Physics or Computing); or a pass in H1 Mathematics | - A pass in any two of the following H1/H2 subjects (Mathematics, Physics, Chemistry, Computing and Computer Science) |
| **INTERNATIONAL BACCALAUREATE DIPLOMA (IB)** | Obtained a minimum grade five for at least two HL and one SL subjects and the IB Diploma, while satisfying the Mother Tongue Language (MTL) requirements. | | |
| | - A good pass in SL/HL Mathematics  
  - A good pass in SL/HL Physics | - A pass in one of the following HL subjects (Mathematics or Physics or Computing); or a pass in SL Mathematics | - A pass in any two of the following SL/HL subjects (Mathematics, Physics, Chemistry, Computing and Computer Science) |
| **NUS HIGH SCHOOL DIPLOMA** | Obtained the NUS High School Diploma, while satisfying the Mother Tongue Language (MTL) requirements. | | |
| **DIPLOMA FROM OTHER INSTITUTIONS** | Each application will be considered on a case-by-case basis. | | |
| **OTHER YEAR 12 EQUIVALENT QUALIFICATIONS** | Completed 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](http://SingaporeTech.edu.sg).
# ADMISSION REQUIREMENTS

<table>
<thead>
<tr>
<th>QUALIFICATION</th>
<th>Sustainable Infrastructure Engineering (Building Services)*</th>
<th>Sustainable Infrastructure Engineering (Land)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIPLOMA FROM ANY LOCAL POLYTECHNIC</td>
<td>Applicants with a relevant engineering background (i.e. Diploma in Aerospace, Mechanical, Mechatronics, Civil, Environmental and Electrical Engineering), may apply for exemption from modules of up to a maximum of two trimesters.</td>
<td>Applicants with a relevant engineering background (i.e. Diploma in Aerospace, Mechanical, Mechatronics or Electrical Engineering), may apply for exemption from modules of up to a maximum of two trimesters.</td>
</tr>
<tr>
<td></td>
<td>Completed a local polytechnic diploma.</td>
<td></td>
</tr>
<tr>
<td>GCE A LEVEL</td>
<td>Obtained passes in at least two H2 subjects and offered General Paper (GP) or Knowledge &amp; Inquiry (KI) in the same sitting, while satisfying the Mother Tongue Language (MTL) requirements.</td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL BACCALAUREATE DIPLOMA (IB)</td>
<td>Obtained a minimum grade five for at least two HL and one SL subjects and the IB Diploma, while satisfying the Mother Tongue Language (MTL) requirements.</td>
<td></td>
</tr>
<tr>
<td>NUS HIGH SCHOOL DIPLOMA</td>
<td>Obtained the NUS High School Diploma, while satisfying the Mother Tongue Language (MTL) requirements.</td>
<td></td>
</tr>
<tr>
<td>DIPLOMA FROM OTHER INSTITUTIONS</td>
<td>BCA diploma holders in the following fields of study may apply:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Architecture (Technology)</td>
<td>- Electrical Engineering and Clean Energy</td>
</tr>
<tr>
<td></td>
<td>- Construction Engineering</td>
<td>- Mechanical Engineering (Green Building Technology)</td>
</tr>
<tr>
<td></td>
<td>- Construction Information Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Electrical Engineering and Clean Energy</td>
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<tr>
<td></td>
<td>- Facilities Management</td>
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<tr>
<td></td>
<td>- Mechanical Engineering (Green Building Technology)</td>
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</tr>
<tr>
<td>OTHER YEAR 12 EQUIVALENT QUALIFICATIONS</td>
<td>Completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.</td>
<td></td>
</tr>
</tbody>
</table>

Note:
* Graduates of the BEng Sustainable Infrastructure Engineering (Building Services) may choose to continue taking the MEngTech Sustainable Infrastructure Engineering (Building Services).
* Graduates of the BEng Sustainable Infrastructure Engineering (Land) may choose to continue taking the MEngTech Sustainable Infrastructure Engineering (Land).

For up-to-date information, please refer to SingaporeTech.edu.sg.