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Singapore Institute of Technology (SIT) is Singapore’s university of applied learning. SIT upholds the vision of being a leader in innovative learning by integrating learning, industry and community.

Our mission is to nurture and develop individuals who build on their interests and talents to impact society in meaningful ways. The university also aims to cultivate in its students four distinctive traits, or the SIT-DNA, which will prepare them to be ‘Thinking Tinkerers’, ‘Able to Learn, Unlearn and Relearn’, ‘Catalysts for Transformation’ and ‘Grounded in the Community’.

The university’s applied degree programmes offer you a chance to experience a unique pedagogy that integrates work and study. SIT’s degree programmes feature a six- to 12-month Integrated Work Study Programme (IWSP) which exemplifies the best of university-industry collaboration.
### WHY PURSUE ENGINEERING AT SIT?

<table>
<thead>
<tr>
<th>Applied Learning Pedagogy</th>
<th>Specialist and Transferable Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 will apply what they learn to actual work situations via the Integrated Work Study Programme (IWSP).</td>
<td>Students are trained to become deep specialists in their respective engineering disciplines. Skill sets including critical problem-solving, decision-making, project management and communication skills, acquired in both the classroom and industry are transferable across industries as they are highly valued by employers everywhere.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Symbiotic Relationship with Industry</th>
<th>Career Progression Opportunities</th>
</tr>
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<tr>
<td>Our engineering programmes at SIT have been developed through extensive consultation with industry, thus creating a curriculum that supports industry’s needs in manpower development and innovation.</td>
<td>With strong signals from the government to grow the pool of engineers, 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.</td>
</tr>
</tbody>
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*Our faculty behind each programme will assist you in building a solid foundation in engineering, which is your launch pad to a successful career, and the beginning of your lifelong learning.*

**Associate Professor Lee Kwee Hiong**
Cluster Director
Engineering
Singapore Institute of Technology

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Reference:
I had several memorable highlights in my learning journey at SIT. One of them was participating in the World Skills Singapore 2018. The railway engineering specialisation curriculum exposed me to the railway systems maintenance of SMRT and SBS Transit, and provided me with extra industry insights and unique opportunities. Separately, I was also nominated by my professors to be a delegate in the World Cities Summit. This enabled me to network with the main representatives of highly established companies, and have meaningful conversations to understand the qualities and traits they are looking for when hiring graduates.”

Tan Ping Jin, Lewis
Sustainable Infrastructure Engineering (Land), BEng (Hons)
Singapore Institute of Technology
My passion lies in sustainable engineering and SIT is the only local university that offers this specialisation. I like how SIT integrates theory and practice in the learning environment. For instance, at practical lab sessions, we discuss how theory can be applied to our projects. Guest lectures by key industry players provide the latest industry insights as well. As the president of the Sustainable Infrastructure Engineering Student Management Committee, I have honed my leadership skills by spearheading several bonding events for the student body and to advocate a study-life balance. My experience at SIT will give me more than just a paper qualification as it provides me the relevant knowledge, skills and work experience to be industry-ready.”

Guam Yi Ting, Natalyn
Sustainable Infrastructure Engineering (Building Services), BEng (Hons)
Singapore Institute of Technology
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 strength to excel at the workplace is evident in their diverse roles and we are proud to have them on our team!”

Ms Joycelin Ang
Assistant HR Manager
Pacific Division
American Bureau of Shipping (ABS)

“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 continue to learn and relentlessly apply the knowledge acquired to the job.”

Mr Frankie Wong
Senior QA Manager
ASM Technology Singapore Pte Ltd

“The students who have worked with us for their IWSP are of very high calibre. They possess excellent work attitudes and initiatives. The students have brought much life to the company and the team, and have become an integral part of the company.”

Mr Edmond Looi
Business Development Director
DVUCA Pte Ltd

“The IWSP is a privileged opportunity for students to be exposed to the dynamic operations and challenges in SMRT. Not only do SIT students possess a positive attitude and enthusiasm to learn, they are also able to integrate theory and practice to come up with innovative suggestions to value-add to the workplace.”

Ms Pang Shi Yun
Deputy Director
Careers & Rewards
SMRT Corporation Ltd

“Through regular engagements with industry partners, SIT has successfully created the IWSP. We are confident that this would be a fruitful platform for the industry to gain bright talents from the institution. This programme is also highly beneficial for the interns who will have a clear perspective prior to entering the industry. We are excited to embark on this programme with SIT and look forward to welcoming future interns for a mutually rewarding experience.”

Mr Yong Derong
Executive Director
Woh Hup (Private) Limited
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 focus of the programme is to produce graduates who are both theoretically-grounded and practice-oriented for the aerospace and MRO industries. The curriculum will also incorporate an intensive eight-month Integrated Work Study Programme (IWSP) at SIAEC.

In addition to a degree awarded by SIT, successful graduates from this programme will also be awarded a Certificate of Recognition (CoR) by SIAEC. 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 a MRO in Singapore will be able to acquire their Aircraft Maintenance License (AML) in a shorter time as compared to their peers.

Visit SingaporeTech.edu.sg for the list of relevant qualifications.
## CURRICULUM STRUCTURE

### YEAR 1

| TRIMESTER 1 |  |
|-------------|  |
| Engineering Mathematics I |  |
| Physics: Motion Dynamics |  |
| Mechanics of Engineering Materials |  |
| Electrical Circuits |  |
| Electrical Devices |  |

| TRIMESTER 2 |  |
|-------------|  |
| Engineering Mathematics II |  |
| Physics: Waves, Optics and Thermodynamics |  |
| Electronic Circuits |  |
| Digital Electronic Instrumentation Systems |  |
| Aircraft Materials I |  |
| Fluid Mechanics |  |

| TRIMESTER 3 |  |
|-------------|  |
| Engineering Mathematics III |  |
| Flight Performance |  |
| Heat Transfer |  |
| Aerodynamics |  |
| Engineering Design Graphics |  |
| Aircraft Materials II |  |

### YEAR 2

| TRIMESTER 1 |  |
|-------------|  |
| Aircraft Maintenance and Basic Practical Skills* |  |
| Overseas Exposure Programme (OEP) (Optional) |  |

| TRIMESTER 2 |  |
|-------------|  |
| Aircraft Structures I |  |
| Flight Mechanics |  |
| Fixed Wing Systems I |  |
| Aircraft Avionic Systems |  |
| Technical Writing and Effective Communication |  |

| TRIMESTER 3 |  |
|-------------|  |
| Capstone Project |  |
| Aircraft Electrical and Cabin Systems |  |
| Human Factors |  |
| Fixed Wing Systems II |  |
| Aircraft Propulsion I |  |

* Students will spend 15 days to go through the M7 Aircraft Maintenance module and 37 days of basic practical skills training at SIAEC.
Students will be trained to complete the SAR-66 basic theory and practical modules certified by the Civil Aviation Authority of Singapore (CAAS).

**PROFESSIONAL CERTIFICATIONS**

- Licensed Aircraft Engineer
- Process, Quality and Product Engineer
- Maintenance Planner
- Fleet Manager
- Technical Service/Repair Development Engineer

**CAREER OPPORTUNITIES**
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.

Students will be groomed to be both practice-oriented and industry-ready in the areas of Efficient Energy Management, Heating, Ventilation and Air Conditioning (HVAC), Indoor Environmental Quality, Human Health and Comfort, Sustainable Building Engineering, Fire Management and Engineering, and Building Information Modelling (BIM). They will also have the opportunity to obtain professional certifications in Green Mark, Fire Services Safety Management, as well as Workplace Safety and Health, which are in line with the government’s initiatives on clean energy and safety at the workplace.

Students have the option to graduate with a BEng (Hons) (based on six trimesters of study and three trimesters of IWSP) and/or a MEngTech (based on two trimesters of study). Graduates with the MEngTech 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 practice in the building services engineering industries in Singapore.

PROGRAMME HIGHLIGHTS

- Heating, Ventilating and Air Conditioning (HVAC)
- Sustainable Building Engineering
- Building Information Modelling (BIM)
- Fire Management and Engineering
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 level).

| YEAR 1 | TRIMESTER 1 | Mechanical Engineering Materials  
|        |             | Engineering Mathematics I  
|        |             | C Programming  
|        |             | Measurements and Sensor Technology  
|        |             | Effective Communication  
|        | TRIMESTER 2 | Dynamics of Machines  
|        |             | Engineering Mathematics IIA  
|        |             | Heat Exchanger and Heat Pump  
|        |             | Engineering Drawing for Building Services  
|        |             | Materials Selection for Engineering Structure  
|        | TRIMESTER 3 | Break  

| YEAR 2 | TRIMESTER 1 | Engineering Mathematics IIB  
|        |             | Fluid Mechanics  
|        |             | Electrical Systems  
|        |             | Sustainable Building Engineering  
|        |             | Mechanics of Solids  
|        | TRIMESTER 2 | Engineering Mathematics III  
|        |             | Land Transport Discovery  
|        |             | Building Physics  
|        |             | BIM for Mechanical, Electrical, and Plumbing Design Studio  
|        |             | HVAC I  
|        |             | Career and Professional Development  
|        | TRIMESTER 3 | HVAC II  
|        |             | Building Energy Simulations and Assessment  
|        |             | Facility Management using BIM  
|        |             | Building Services Engineering Discovery  
|        |             | Design Project I  

SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

YEAR 3

TRIMESTER 1

TRIMESTER 2

▶ Integrated Work Study Programme (IWSP)

TRIMESTER 3

▶ Fire Engineering Fundamentals
▶ Fire Safety Management
▶ Automation and Control in Building
▶ Work Place Safety and Health
▶ Design Project II

YEAR 4

TRIMESTER 1

TRIMESTER 2

▶ Capstone Project I
▶ Construction Management using BIM
▶ Project Management
▶ Acoustic Engineering
▶ Manufacturing Technology

TRIMESTER 3

▶ Capstone Project II (Continue from I)
▶ Indoor Environmental Quality Engineering
▶ Change Management
▶ Lighting Technology for Building Services
▶ Structure Vibration and Control

PROFESSIONAL CERTIFICATIONS

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

CONSTRUCTION SAFETY COURSE FOR PROJECT MANAGERS (CSCPM)
Students will be trained in skill sets required for the Construction Safety Course for Project Managers (CSCPM) by the Ministry of Manpower (MOM). They will also learn how to plan and implement occupational health programmes as well as risk management programmes for construction sites, including incident reporting and accident investigations.

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.
SUSTAINABLE INFRASTRUCTURE ENGINEERING
(BUILDING SERVICES)

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.

CAREER OPPORTUNITIES

- Design Engineer (with focus on HVAC or other relevant Mechanical areas)
- BIM Manager
- Facility Manager (Mechanical)
- Sustainable Building Consultant
- 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 and Sembcorp Industries.

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 either graduate with a BEng (Hons) (based on six trimesters of study and three trimesters of IWSP) or a MEngTech (based on eight trimesters of study and three trimesters of IWSP).
### Year 1

#### Trimester 1
- Mechanics of Engineering Materials
- Engineering Mathematics I
- C Programming
- Measurements and Sensor Technology
- Effective Communication

#### Trimester 2
- Dynamics of Machines
- Engineering Mathematics IIA
- Heat Exchanger and Heat Pump
- Engineering Design Graphics
- Materials Selection for Engineering Structure

#### Trimester 3
- Break

### Year 2

#### Trimester 1
- Engineering Mathematics IIB
- Fluid Machineries
- Engineering Electronics and Instrumentation
- NDT I
- Mechanics of Solids

#### Trimester 2
- Engineering Mathematics III
- Land Transport Discovery
- Marine Transport Discovery
- Aerospace Engineering Discovery
- Career and Professional Development

#### Trimester 3
- Railway Signalling and Communications
- Rolling Stock and Permanent Way Systems
- NDT II
- Total Preventive Maintenance
- Lean and Quick Response Repair
- Design Project I

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+ Supplemented by lab work (four labs for each discovery module). These modules aim to provide an introduction to the performance of various engineering concepts/devices (land, sea, air) and their maintenance and services needs.
## SUSTAINABLE INFRASTRUCTURE ENGINEERING (LAND)

### YEAR 3

| TRIMESTER 1 | Railway Supervisory Control and Data Acquisition  
|            | Safety Standards/Legislation/Best Practices  
|            | Statistical Process Control  
|            | Remanufacturing of Engineering Components  
|            | Design Project II |

| TRIMESTER 2 | Capstone Project  
|            | NDT III  
|            | High Performance Alloys  
|            | Project Management  
|            | Manufacturing Technology |

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

### YEAR 4

| TRIMESTER 1 | Integrated Work Study Programme (IWSP) |

| TRIMESTER 2 | Capstone Project  
|            | NDT III  
|            | High Performance Alloys  
|            | Project Management  
|            | Manufacturing Technology |

| TRIMESTER 3 | Capstone Project  
|            | Change Management  
|            | Systems Engineering  
|            | Electrical Power and Propulsion  
|            | Structure Vibration and Control |
SUSTAINABLE INFRASTRUCTURE ENGINEERING (LAND)

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.

CAREER OPPORTUNITIES

Graduates can look forward to careers in various land transport organisations such as:

- LTA
- SMRT
- SBS Transit
- Sembcorp Industries
- Keppel Corp
- Singapore Technologies
- Railway Suppliers
The members of the Industry Advisory Committee for the Sustainable Infrastructure Engineering (Building Services) and (Land) programmes are:

**Mr CHUA Chong Kheng**  
(Chairperson)  
Deputy Chief Executive  
Land Transport Authority

**Mr ANG Kian Seng**  
Group Director  
Technology Development  
Building Construction Authority

**Dr Samuel CHAN Wai**  
Director of Systems  
Systems and Rail Assets Group  
Land Transport Authority

**Dr KOH Yong Khiang**  
Vice President/Chief Engineer  
Engineering Analysis  
Singapore Technologies Kinetics 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 Vincent TAN Peng Hock**  
Senior Vice President  
Corporate Services and Rail Operations  
SMRT Corporation Ltd

**Er TEO Tiong Yong**  
Director of Public Projects  
Jurong Town Corporation
The Telematics (Intelligent Transportation Systems Engineering) programme is the first-of-its-kind in Singapore, comprising two interdisciplinary fields – Vehicular Telematics and Intelligent Transportation Systems (ITS) Engineering.

With an emphasis on the enhancement of our public transport systems, ITS will be the mainstay for managing and optimising limited road space in Singapore. The transport landscape is going through dramatic change driven by technological innovations in the form of electrification, connectivity and autonomy, and rapid growth in car-sharing and ride-sharing demand. The mobility system of the future will be radically different from what exists today. Next-generation vehicles are electric and autonomous and have increased connectivity to other vehicles, infrastructure and internet. The future will also see a shift in uptake in shared mobility.

Developed with support from organisations such as LTA, ST Electronics, NCS and Continental Automotive, students in this programme will be exposed to the latest transportation technologies, applications and solutions. They will also be equipped with electrical engineering and computer science core skills in ITS engineering, vehicular communication and telematics technologies in order to work in this technically challenging field.

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**PROGRAMME HIGHLIGHTS**

**Industrial Immersion Programme (IIP) — Visits to Telematics, Automotive Engineering or ITS Companies in Singapore and Overseas**

**Participation in Trend Antenna Programme by Continental Automotive Singapore Pte Ltd**
## TELEMATICS
*(INTELLIGENT TRANSPORTATION SYSTEMS ENGINEERING)*

### CURRICULUM STRUCTURE

#### YEAR 1

| TRIMESTER 1 | Engineering Mathematics I  
|            | Newtonian Mechanics and Waves  
|            | Electronic Circuits  
|            | Introduction to Programming  
|            | Technical Communication I |

| TRIMESTER 2 | Engineering Mathematics II  
|            | Electricity and Magnetism  
|            | Digital Systems  
|            | Object Oriented Programming  
|            | Linear Signals and Systems |

| TRIMESTER 3 | Break |

#### YEAR 2

| TRIMESTER 1 | Sensors and Control  
|            | Embedded System Design  
|            | Instrumentation and Displays  
|            | Database and Information Systems  
|            | Career Professional Development |

| TRIMESTER 2 | Wireless Communications  
|            | RF Engineering and Electromagnetic Compatibility  
|            | Operating Systems and Automotive OS  
|            | Internet Programming  
|            | Technical Communication II |

| TRIMESTER 3 | Integrated Work Study Programme (IWSP) |
## TELEMATICS
**INTELLIGENT TRANSPORTATION SYSTEMS ENGINEERING**

### YEAR 3

<table>
<thead>
<tr>
<th>TRIMESTER 1</th>
<th>Integrated Work Study Programme (IWSP)</th>
</tr>
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<tbody>
<tr>
<td>TRIMESTER 2</td>
<td>- Design Project&lt;br&gt;  - Traffic Regulations, Safety and Standards&lt;br&gt;  - Traffic Signal and Toll Systems&lt;br&gt;  - Systems and Software Engineering&lt;br&gt;  - Digital Signal Processing&lt;br&gt;  - Business and Project Management</td>
</tr>
<tr>
<td>TRIMESTER 3</td>
<td>- Design Project&lt;br&gt;  - Transport Management&lt;br&gt;  - Infotainment Technologies&lt;br&gt;  - Automotive Electronics&lt;br&gt;  - Car Interconnects and Vehicular Networks&lt;br&gt;  - Professional Ethics and Engineers in Society</td>
</tr>
</tbody>
</table>

### CAREER OPPORTUNITIES

- **Engineer (Design/Application/Network/Telematics/Technology Integration)**
- **Software Engineer**
- **Engineer (Intelligent Transportation Systems)**
- **Project Manager/Officer/Engineer**
The members of the Industry Advisory Committee for this programme are:

**Mr ANG Kim Siah**  
Senior Vice President/General Manager  
Mobility and Telematics Business Unit  
ST Electronics (Info-Comm Systems) Pte Ltd and  
ST Electronics (Abu Dhabi)

**Dr CHIN Kian Keong**  
Chief Engineer  
Land Transport Authority

**Mr LO Kien Foh**  
Managing Director  
Continental Automotive Singapore Pte Ltd

**Mr SING Mong Kee**  
Director  
Keespires Consultancy
The Bachelor of Engineering with Honours in Systems Engineering (ElectroMechanical Systems), also known as SEEMS, is a multidisciplinary degree programme that brings together the fields of mechanical, electrical, electronic and computer engineering with a holistic approach to system development. Systems engineering focusses on the design, development, implementation and life-cycle management of complex interconnected systems. The SEEMS programme specifically focusses on the engineering of complex mechanical systems that are controlled by microprocessors and microcontrollers.

Graduates of this programme will understand the larger context of hardware and software engineering, and be able to solve complex problems through an integrated and multidisciplinary approach.

SEEMS is a joint degree programme offered by Singapore Institute of Technology (SIT) and DigiPen Institute of Technology Singapore, [DigiPen (Singapore)].
## Curriculum Structure

**Year 1**

<table>
<thead>
<tr>
<th><strong>Trimester 1</strong></th>
<th>course titles</th>
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<tbody>
<tr>
<td></td>
<td>Computer Environment</td>
</tr>
<tr>
<td></td>
<td>Calculus and Analytic Geometry 1</td>
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<tr>
<td></td>
<td>Computer Aided Design</td>
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<td></td>
<td>Engineering Fabrication</td>
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<td></td>
<td>C Programming</td>
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<tr>
<td></td>
<td>Composition</td>
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<table>
<thead>
<tr>
<th><strong>Trimester 2</strong></th>
<th>course titles</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Systems Engineering Project 1</td>
</tr>
<tr>
<td></td>
<td>Calculus and Analytic Geometry 2</td>
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<tr>
<td></td>
<td>Digital Electronics 1</td>
</tr>
<tr>
<td></td>
<td>C++ Programming</td>
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<td></td>
<td>Systems and Software Engineering</td>
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<td></td>
<td>Interpersonal and Work Communication</td>
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<table>
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<tr>
<th><strong>Trimester 3</strong></th>
<th>course titles</th>
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<td></td>
<td>Break</td>
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**Year 2**

<table>
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<tr>
<th><strong>Trimester 1</strong></th>
<th>course titles</th>
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<tbody>
<tr>
<td></td>
<td>Systems Engineering Project 2</td>
</tr>
<tr>
<td></td>
<td>Calculus and Analytic Geometry 3</td>
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<tr>
<td></td>
<td>Motion Dynamics</td>
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<td></td>
<td>Embedded Microcontroller Systems</td>
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<td></td>
<td>Systems and Project Management</td>
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<table>
<thead>
<tr>
<th><strong>Trimester 2</strong></th>
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<tbody>
<tr>
<td></td>
<td>Systems Engineering Project 3</td>
</tr>
<tr>
<td></td>
<td>Waves, Optics and Thermodynamics</td>
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<td></td>
<td>Electric Circuits</td>
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<td>ElectroMechanical Design</td>
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<td></td>
<td>Requirement Engineering and Systems Architecture</td>
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<td>Career Planning and Development</td>
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<table>
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<tr>
<th><strong>Trimester 3</strong></th>
<th>course titles</th>
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<tr>
<td></td>
<td>Overseas Immersion Programme (OIP)</td>
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<tr>
<td></td>
<td>Linear Algebra</td>
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<td></td>
<td>Differential Equations</td>
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<td></td>
<td>Electricity and Magnetism</td>
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<td></td>
<td>Digital Electronics 2</td>
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<td>Advanced C/C++</td>
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</table>
### Systems Engineering
(Electromechanical Systems)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TRIMESTER 1</th>
<th>TRIMESTER 2</th>
<th>TRIMESTER 3</th>
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<tbody>
<tr>
<td>3</td>
<td>Break</td>
<td>Integrated Work Study Programme (IWSP)</td>
<td>Integrated Work Study Programme (IWSP) / The Engineer and Society</td>
</tr>
<tr>
<td>4</td>
<td>Capstone Project 1 / Probability and Statistics / Control Systems / Data Structures / Model-Based Systems Engineering / Systems Modelling and Simulation</td>
<td>Capstone Project 2 / Robotics / Risk and Decision Analysis / Systems Integration, Verification and Validation / Large Scale Systems</td>
<td></td>
</tr>
</tbody>
</table>

### CAREER OPPORTUNITIES
- Systems Engineer
- Project Engineer
- Mechatronics Engineer
- Design Engineer
- Software Engineer
The members of the Industry Advisory Committee for this programme are:

**Mr Sudesh K KRISHNAMOORTHY**
Rational Brand Architect  
IBM Software  
ASEAN IBM

**Mr Simon KUIK Sow Hong**  
Vice President/Head  
Research and Development  
Sembcorp Marine Ltd

**Mr OH Sin Hin**  
Senior Manager  
Systems Assurance and Integration Division  
Land Transport Authority

**Dr TOK Eng Soon**  
Department of Physics  
National University of Singapore

**Dr Victor WONG**  
Head  
Facilities Management Biopolis  
Agency for Science Technology and Research
The Electrical Power Engineering (EPE) programme is a three-year honours degree jointly offered by SIT and Newcastle University (NU). As the first locally-offered, dedicated electrical power engineering undergraduate programme, the curriculum is specially customised to meet industry demand in Singapore. It will play an important role in increasing the number of graduates to address workforce demand in the power sector while fulfilling the country’s vision of becoming a Smart Nation. As a joint programme, it will leverage on the expertise and resources of both SIT and NU.

Graduates from this programme are needed in diverse sectors including electrical power generation, electrical power transmission and distribution, renewable energy, smart grid, land transportation, power and automation, oil and gas, and liquefied natural gas. Through a rigorous curriculum with strong industry focus, graduates will be both theoretically-grounded and practice-oriented. This will equip them with the necessary technical competence, tools and personal skills to develop their understanding, expertise and professionalism as they progress through their career. 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 SIT Master of Engineering Technology in Electrical Power Engineering (MEngTech EPE), which provides the further learning needed for Chartered Engineers or Professional Engineers registration.
## CURRICULUM STRUCTURE

### YEAR 1
- Circuit Theory
- Electronics
- Electricity and Magnetism
- Signals and Communications
- C Programming
- Engineering Mathematics I
- Engineering Mathematics II
- 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 (OIP)
- Integrated Work Study Programme (IWSP)

### YEAR 3
- Integrated Work Study Programme (IWSP)
- 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
Students are required to complete eight coursework modules and a 12 ECTS* credit project, amounting to a total of 60 credits.

The MEngTech graduate degree is solely awarded by SIT, and may be 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.

Note: The BEng (Hons) Electrical Power Engineering programme is jointly offered by SIT and Newcastle University (NU).
The Marine programmes, jointly offered by SIT and Newcastle University (NU), 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 (IWSP) with leading marine and offshore engineering organisations such as Keppel O&M Ltd, Sembcorp Marine Ltd, Singapore Technologies 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 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 and other machinery of pneumatic or hydraulic systems.

Visit SingaporeTech.edu.sg for the list of relevant qualifications.
### CURRICULUM STRUCTURE

#### YEAR 1
- Materials in the Marine Environment
- Marine Mechanics IA
- Engineering Mathematics
- Marine Engineering IA
- Naval Architecture IA
- Electrical Engineering
- Marine Mechanics IB
- Engineering Mathematics and Statistics
- Marine Engineering IB
- Naval Architecture IB

#### YEAR 2
- Analytical Methods in Marine Technology
- Marine Engineering IIA
- Marine Structures IA
- Ship Resistance
- Introduction to Business Management
- Naval Architecture II
- Marine and Offshore Production Management
- Marine Engineering IIB
- Marine Structures IB
- Marine Propulsion

<table>
<thead>
<tr>
<th>Marine Engineering</th>
<th>Naval Architecture</th>
<th>Offshore Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Electrical Engineering</td>
<td>Marine Dynamics</td>
<td>Marine Dynamics</td>
</tr>
<tr>
<td>Marine Transport Business*</td>
<td>Drilling Engineering*</td>
<td>Overseas Immersion Programme (OIP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Integrated Work Study Programme (IWSP)</td>
</tr>
</tbody>
</table>

* This module will be conducted over seven weeks.
MARINE ENGINEERING/NAVAL ARCHITECTURE/OFFSHORE ENGINEERING

YEAR 3

- Integrated Work Study Programme (IWSP)
- Capstone Project and Report

<table>
<thead>
<tr>
<th>Marine Engineering</th>
<th>Naval Architecture</th>
<th>Offshore Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Engineering Design</td>
<td>Ship Design</td>
<td>Offshore Engineering Design</td>
</tr>
<tr>
<td>Marine Engineering III</td>
<td>Marine Structures II</td>
<td>Marine Structures II</td>
</tr>
<tr>
<td>Internal Combustion Engines</td>
<td>Advanced Ship and Offshore Hydrodynamics</td>
<td>Advanced Ship and Offshore Hydrodynamics</td>
</tr>
<tr>
<td>Dynamic Modelling and Simulation</td>
<td>Advanced Resistance and Propulsion</td>
<td>Subsea and Pipeline Engineering</td>
</tr>
</tbody>
</table>

CAREER OPPORTUNITIES

Graduates can look forward to careers in these areas:

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

Mr KOH Tuan Yew
Director
Industry and Resource Policy Office
Ministry of Defence, Singapore

Ms Winnie LOW
Executive Director
Association of Singapore Marine Industries (ASMI)

Mr KWAN Seng Fatt
General Manager
Nam Cheong Limited

Mr KOH Yong Ping
Chief Executive
Bureau Veritas Marine (Singapore) Pte Ltd

Mr Mervin ONG
Managing Director
Wärtsilä Singapore Pte Ltd

Mr Chris ONG Leng Yeow (Vice-Chairperson)
Chief Executive Officer
Keppel Offshore & Marine Ltd

ME7 Andy TAY Kia Han
Head Naval Logistics
Republic of Singapore Navy

Dr Armin BRUCK
President and Chief Executive Officer
Siemens Pte Ltd

Ms Gina LEE-WAN
Partner
Allen & Gledhill

Mr David GAN
Director
South Pacific Region Survey
American Bureau of Shipping (ABS)

Ms Cristina SAENZ de SANTA MARIA
Regional Manager
South East Asia, Oceania and India, Maritime
DNV-GL

Mr David KELLY
Director
Asia Pacific
Institute of Marine Engineering, Science & Technology
The Mechanical Design and Manufacturing Engineering (MDME) degree programme is a three-year honours programme jointly offered by SIT and Newcastle University (NU). Through a unique and interdisciplinary curriculum that combines essential knowledge from mechanical design, mechatronics and manufacturing, the programme is designed to meet the manpower needs of local engineering and manufacturing industries.

Students will learn about fundamental principles in mechanical engineering including statics, dynamics, materials, solid and fluid mechanics, control, thermodynamics, and heat transfer. Following these fundamentals, they will then be exposed to a curriculum that promotes and specialises in process improvement and innovation in manufacturing. Curriculum topics include manufacturing technology, industrial automation, lean manufacturing, statistical process control, factory operations and production management. Students will learn to work independently, as well as in groups to collaboratively meet and exceed engineering project objectives.

Within the duration of the course, students will undertake the Integrated Work Study Programme (IWSP) at local engineering companies to apply the knowledge gained from the course, accumulate valuable work experience, and network with industry stalwarts. As part of the IWSP, students will also work on engineering design and productivity projects which may be carried through 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 enhance processes in the manufacturing industry.
MECHANICAL DESIGN AND MANUFACTURING ENGINEERING

CURRICULUM STRUCTURE

YEAR 1
- Engineering Mathematics I
- Engineering Mathematics II
- Engineering Statics
- Mechanics of Materials
- Materials for Engineers
- Fundamentals of Thermofluids
- Programming
- Circuits and Digital Electronics
- Fabrication and Prototyping Practices
- Concurrent 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 (OIP)
- Integrated Work Study Programme (IWSP)
MECHANICAL DESIGN AND MANUFACTURING ENGINEERING

YEAR 3

- Integrated Work Study Programme (IWSP)
- Engineering Systems Modelling and Simulation
- Mechatronics Systems
- Robotics
- Industrial Automation
- Manufacturing Systems Management
- Capstone Project

CAREER OPPORTUNITIES

- Engineer (Mechanical/ Mechatronics/ Manufacturing/ Design/QA/R&D)
- Professional Officer/ Consultant in Commercial and Public Sectors
- Engineering Project Manager
The Bachelor Degree with Honours in Aerospace Engineering programme is jointly offered by SIT and the University of Glasgow (UofG). This three-year degree programme will equip students with the specific skill set necessary to meet the growing manpower demands in the local and global aerospace industry with a specific emphasis on autonomous aerial vehicles.

Students will be equipped 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 (OIP), during which students will undertake a group project as well as witness industry 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 (IWSP) in local and overseas companies, working in the areas of unmanned systems and aerospace engineering.

Graduates from the programme will be equipped with knowledge of wireless communication, RF engineering, guidance and navigation systems, signal processing, unmanned propulsion systems, data analytics, risk and reliability and aviation legislation. They will be innovative individuals who are able to apply their technical and practical knowledge in the development of novel approaches, solutions and implementations of unmanned aerial systems.
## CURRICULUM STRUCTURE

### YEAR 1

<table>
<thead>
<tr>
<th>TRIMESTER 1</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Engineering Mathematics I</td>
</tr>
<tr>
<td></td>
<td>Engineering Physics I</td>
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<tr>
<td></td>
<td>Engineering Mechanics</td>
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<tr>
<td></td>
<td>Fundamentals of Electronics and Circuits</td>
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<tr>
<td></td>
<td>Fundamentals of Programming</td>
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<td></td>
<td>Engineering Design Graphics</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TRIMESTER 2</th>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Engineering Mathematics II</td>
</tr>
<tr>
<td></td>
<td>Dynamics</td>
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<td></td>
<td>Control</td>
</tr>
<tr>
<td></td>
<td>Effective Communication</td>
</tr>
<tr>
<td></td>
<td>Aerospace Engineering Skills</td>
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<tr>
<td></td>
<td>Fluid Mechanics</td>
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<table>
<thead>
<tr>
<th>TRIMESTER 3</th>
<th>Courses</th>
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<tbody>
<tr>
<td></td>
<td>Break</td>
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</table>

### YEAR 2

<table>
<thead>
<tr>
<th>TRIMESTER 1</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Engineering Mathematics III</td>
</tr>
<tr>
<td></td>
<td>Aircraft Performance</td>
</tr>
<tr>
<td></td>
<td>Aerospace Control</td>
</tr>
<tr>
<td></td>
<td>Engineering Systems Modelling and Simulation</td>
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<tr>
<td></td>
<td>Flight Mechanics</td>
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<table>
<thead>
<tr>
<th>TRIMESTER 2</th>
<th>Courses</th>
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<tbody>
<tr>
<td></td>
<td>Aircraft Propulsion</td>
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<tr>
<td></td>
<td>Flight Dynamics</td>
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<tr>
<td></td>
<td>Computational Aerodynamics</td>
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<tr>
<td></td>
<td>Software Engineering</td>
</tr>
<tr>
<td></td>
<td>Career and Professional Development</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRIMESTER 3</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aerospace Manufacturing Processes, Materials and Structures</td>
</tr>
<tr>
<td></td>
<td>Risk and Reliability Analysis</td>
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<tr>
<td></td>
<td>Wireless Communications and Signal Processing</td>
</tr>
<tr>
<td></td>
<td>Overseas Immersion Programme (OIP)</td>
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<tr>
<td></td>
<td>Design Project</td>
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</tbody>
</table>
### AEROSPACE ENGINEERING

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TRIMESTER 1</th>
<th>TRIMESTER 2</th>
<th>TRIMESTER 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Integrated Work Study Programme (IWSP)</td>
<td>Data Analytics</td>
<td>Professional Engineering Practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flight Control Systems</td>
<td>Composite Materials and Finite Element Analysis</td>
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<tr>
<td></td>
<td></td>
<td>Capstone Project</td>
<td></td>
</tr>
</tbody>
</table>

### CAREER OPPORTUNITIES

Graduates can look forward to careers in these areas:

- Unmanned Aerial Systems (UAS)
- Aircraft Engine Design and Servicing
- Defense Contractors
The Bachelor Degree with Honours in Civil Engineering programme is jointly offered by SIT and the University of Glasgow (UofG). This programme will play an important role in addressing the lack of local graduate manpower with the necessary civil engineering professional qualifications for the building and construction industry in sustained 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, provide technically sound, economically feasible and sustainable solutions to complex problems.

Upon successful completion of their BEng (Hons), students may continue with the Master of Engineering Technology in Civil Engineering graduate degree that will qualify them to sit for the professional examination, conducted by the Professional Engineers Board of Singapore. They may take the exam immediately, or finish the BEng (Hons) first and gain relevant work experience before coming back to pursue the MEngTech degree. In this way, they can study at a pace that best suits their needs and abilities. Strong emphasis is placed on the industrial relevance in the curriculum development of the BEng (Hons) and MEngTech programmes in consultation with government agencies and companies from the construction sector.

Students will acquire deep specialist training at the MEngTech level, which consists of five compulsory core modules and five selected modules taught at an advanced graduate level depending on the area of specialisation in Structural Engineering, Geotechnical Engineering or Rail Engineering.
<table>
<thead>
<tr>
<th>YEAR 1</th>
<th></th>
<th>YEAR 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRIMESTER 1</strong></td>
<td>Civil Engineering and Sustainable Built Environment</td>
<td>Engineering Mathematics III</td>
</tr>
<tr>
<td></td>
<td>Engineering Physics</td>
<td>Hydraulics and Hydrology</td>
</tr>
<tr>
<td></td>
<td>Engineering Mathematics I</td>
<td>Structural Analysis I</td>
</tr>
<tr>
<td></td>
<td>Civil Engineering Skills</td>
<td>Geotechnical Engineering</td>
</tr>
<tr>
<td></td>
<td>Statics and Structural Mechanics</td>
<td>BIM for Civil Engineers</td>
</tr>
<tr>
<td><strong>TRIMESTER 2</strong></td>
<td>Graphical Communication</td>
<td>Transportation Engineering</td>
</tr>
<tr>
<td></td>
<td>Effective Communication</td>
<td>Environmental Engineering</td>
</tr>
<tr>
<td></td>
<td>Engineering Mathematics II</td>
<td>Structural Analysis II</td>
</tr>
<tr>
<td></td>
<td>Fluid Mechanics</td>
<td>Structural Design</td>
</tr>
<tr>
<td></td>
<td>Civil Engineering Materials</td>
<td>Professional Communication and Development</td>
</tr>
<tr>
<td><strong>TRIMESTER 3</strong></td>
<td>Break</td>
<td><strong>TRIMESTER 1</strong></td>
</tr>
<tr>
<td></td>
<td>Foundation Engineering</td>
<td><strong>TRIMESTER 2</strong></td>
</tr>
<tr>
<td></td>
<td>Construction Technology</td>
<td>Transportation Engineering</td>
</tr>
<tr>
<td></td>
<td>Design of Steel and Concrete Structures</td>
<td>Environmental Engineering</td>
</tr>
<tr>
<td></td>
<td>Seminar and Site Visit</td>
<td>Structural Analysis II</td>
</tr>
<tr>
<td></td>
<td>Design Project/Overseas Immersion Programme (OIP) at Glasgow</td>
<td>Structural Design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional Communication and Development</td>
</tr>
</tbody>
</table>
## Year 3

<table>
<thead>
<tr>
<th>Trimester 1</th>
<th>Integrated Work Study Programme (IWSP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimester 2</td>
<td></td>
</tr>
<tr>
<td>- Project Planning and Management</td>
<td></td>
</tr>
<tr>
<td>- Civil Engineering Practices</td>
<td></td>
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<tr>
<td>- Ground Engineering</td>
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<tr>
<td>- Rail Engineering</td>
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<tr>
<td>- Capstone Project</td>
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</tr>
<tr>
<td>Trimester 3</td>
<td></td>
</tr>
<tr>
<td>- Structural Engineering</td>
<td></td>
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<tr>
<td>- Wind and Earthquake Engineering</td>
<td></td>
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<tr>
<td>- Tall Buildings</td>
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<tr>
<td>- Advanced Design of Steel and Composite Structures</td>
<td></td>
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<tr>
<td>- Advanced Foundation Engineering</td>
<td></td>
</tr>
<tr>
<td>- Advanced Ground Engineering</td>
<td></td>
</tr>
<tr>
<td>- Earth Retaining and Stabilising Structures</td>
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</tbody>
</table>

## Year 4

<table>
<thead>
<tr>
<th>Trimester 1</th>
<th>Practice of Professional Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Structural Stability and Dynamics</td>
<td></td>
</tr>
<tr>
<td>- Advanced Design of Concrete and Precast Structures</td>
<td></td>
</tr>
<tr>
<td>- Advanced Material Technology</td>
<td></td>
</tr>
<tr>
<td>- Computational Modelling of Complex Soil-Structure Problems</td>
<td></td>
</tr>
<tr>
<td>Trimester 2</td>
<td>Structural Engineering</td>
</tr>
<tr>
<td>- Three modules from a specialisation track and choose two specialisation modules or a MEngTech dissertation.</td>
<td></td>
</tr>
<tr>
<td>- Wind and Earthquake Engineering</td>
<td></td>
</tr>
<tr>
<td>- Tall Buildings</td>
<td></td>
</tr>
<tr>
<td>- Advanced Design of Steel and Composite Structures</td>
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<tr>
<td>- Advanced Foundation Engineering</td>
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<tr>
<td>- Advanced Ground Engineering</td>
<td></td>
</tr>
<tr>
<td>- Earth Retaining and Stabilising Structures</td>
<td></td>
</tr>
<tr>
<td>Rail Engineering</td>
<td></td>
</tr>
<tr>
<td>- Advanced Rail Engineering I – Planning and Design</td>
<td></td>
</tr>
<tr>
<td>- Advanced Rail Engineering II – Operations and Maintenance</td>
<td></td>
</tr>
<tr>
<td>- Risk and Safety Management of Rail Infrastructures</td>
<td></td>
</tr>
</tbody>
</table>

^ The MEngTech graduate degree is solely awarded by SIT.
Note: The BEng (Hons) Civil Engineering programme is jointly offered by SIT and University of Glasgow (UoG).
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 careers in:

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

* The programme is currently seeking accreditation from EAB Singapore.
Note: The BEng (Hons) Civil Engineering programme is jointly offered by SIT and University of Glasgow (UoG).
The members of the Industry Advisory Committee for this programme are:

**Mr Kim YONG Tiam Yoon (Chairperson)**
Deputy Chairman
Woh Hup (Private) Limited

**Er CHEW Keat Chuan**
Commissioner of Building Control
Building and Construction Authority

**Er Paul FOK**
Group Director
Land Transport Authority

**Er Dr HO Nyok Yong**
Chief Operating Officer
Samwoh Corporation

**Er LAI Huen Poh**
Managing Director
RSP Architects Planners & Engineers Pte Ltd

**Er Dr Shahzad NASIM**
Executive Group Chairman
Meinhardt Group International
The Bachelor Degree with Honours in Mechanical Engineering programme is jointly offered by SIT and the University of Glasgow (UofG). This three-year honours degree programme is designed to meet growing manpower demands in many disruptive digital technologies for key industry sectors in Singapore, including medical technology, industrial automation/robotics, smart manufacturing, maritime and healthcare.

Students will be equipped with the knowledge, understanding and skills for mechanical engineering and acquire advanced knowledge in Industrial Internet of Things (IIoT), data analytics, healthcare systems engineering and standards, smart 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 manufacturing and design through modules in additive engineering, advanced 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 design and mechatronics as well as deep knowledge in digitalisation. They will be practice-oriented and innovative individuals with the right skill sets for the future digital economy.
<table>
<thead>
<tr>
<th>YEAR 1</th>
<th></th>
</tr>
</thead>
</table>
| **TRIMESTER 1** | ▶ Engineering Mathematics I  
▶ Fundamentals of Programming  
▶ Engineering Mechanics  
▶ Engineering Design Graphics  
▶ Fundamentals of Electronics and Circuits  
▶ Digital Engineering Skills |
| **TRIMESTER 2** | ▶ Engineering Mathematics II  
▶ Dynamics  
▶ Control  
▶ Effective Communication  
▶ Sensor and Signal Technology  
▶ Materials and Manufacturing Technology |
| **TRIMESTER 3** | ▶ Break |
## MECHANICAL ENGINEERING

### YEAR 2

| TRIMESTER 1 | • Engineering Mathematics III  
• Mechanics of Solids  
• Thermodynamics and Heat Transfer  
• Design and Manufacture I  
• Mechanics of Mechanisms  
• Automation and Robotics  
• Real-time Computing Systems |
| --- | --- |
| TRIMESTER 2 | • Mechanical Design  
• Fluid Mechanics  
• Additive Engineering  
• Modelling and Simulation  
• Career and Professional Development  
• Mechatronics Design  
• Electronic System Design  
• Software Engineering |
| TRIMESTER 3 | • Specialised Engineering Project  
• Risk and Reliability Analysis  
• IIoT and Data Analytics I  
• Overseas Immersion Programme (OIP)  
  - Design and Manufacture II  
  - Mechatronics Group Project |

### YEAR 3

| TRIMESTER 1 | • Integrated Work Study Programme (IWSP) |
| TRIMESTER 2 | • Capstone Project  
• Professional Engineering Practice  
• IIoT & Data Analytics II  
• Microelectronics for Engineering Products  
• Advanced Materials Technology  
• Unmanned Systems  
• Digital Signal Processing |
| TRIMESTER 3 | • R&D Mechanical Design Engineer  
• Development Engineer (Mechanical Design)  
• Automation Engineer (CAD/Automation)  
• Project Engineer  
• Software Engineer  
• Mechatronics Engineer |

### CAREER OPPORTUNITIES

Graduates can look forward to careers in these areas:
ADMISSION REQUIREMENTS

SIT adopts an aptitude-based approach in assessing applicants for admission by considering the following criteria:

<table>
<thead>
<tr>
<th>MEETING THE MINIMUM ACADEMIC REQUIREMENTS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ Full-time Diploma from any local polytechnic</td>
</tr>
<tr>
<td>➤ GCE A Level</td>
</tr>
<tr>
<td>➤ International Baccalaureate Diploma (IB)</td>
</tr>
<tr>
<td>➤ NUS High School Diploma</td>
</tr>
<tr>
<td>➤ Diploma from other institutions</td>
</tr>
<tr>
<td>➤ Other International Qualifications</td>
</tr>
</tbody>
</table>

PASSION

PERSONAL QUALITIES

RELEVANT WORK EXPERIENCE/INTERNSHIPS

CO-CURRICULA INTERESTS

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 tests 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).
<table>
<thead>
<tr>
<th>DEGREE PROGRAMME</th>
<th>FULL-TIME DIPLOMA FROM ANY LOCAL POLYTECHNIC</th>
<th>GCE A LEVEL</th>
<th>INTERNATIONAL BACALAUAREATE DIPLOMA (IB)</th>
<th>NUS HIGH SCHOOL DIPLOMA</th>
<th>DIPLOMA FROM OTHER INSTITUTIONS</th>
<th>OTHER INTERNATIONAL QUALIFICATIONS</th>
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<tbody>
<tr>
<td>Aircraft Systems Engineering</td>
<td>Completed a relevant full-time local polytechnic Diploma.</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 (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 (MTL) requirements.</td>
<td>Obtained the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.</td>
<td>Each application will be considered on a case-by-case basis.</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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</table>
| Sustainable Infrastructure Engineering (Building Services), BEng (Hons)* | Completed a full-time local polytechnic Diploma. Applicants with 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. For applicants with non-relevant engineering background, i.e. Diploma from other engineering disciplines, exemption from modules will be considered on a case-by-case basis. | 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 (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 (MTL) requirements. | Obtained the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements. | BCA diploma holders in the following may apply:  
  > Architecture (Technology)  
  > Construction Engineering  
  > Construction Information Technology  
  > Electrical Engineering and Clean Energy  
  > Facilities Management  
  > Mechanical Engineering (Green Building Technology) | Completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission. |
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<th>Degree Programme</th>
<th>Full-time Diploma from any local polytechnic</th>
<th>Other International Qualifications</th>
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<td>Sustainable Infrastructure Engineering (Land), BEng (Hons)*</td>
<td>Completed a full-time local polytechnic Diploma. Applicants with 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. For applicants with non-relevant diplomas, exemption from modules will be considered on a case-by-case basis.</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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<td>Telematics (Intelligent Transportation Systems), BEng (Hons)*</td>
<td>Completed a full-time local polytechnic Diploma. Applicants with relevant engineering background, i.e. Diploma in Electrical and Computer Engineering and Information Technology, may apply for exemption from modules of up to a maximum of two trimesters. For applicants with non-relevant diplomas, exemption from modules will be considered on a case-by-case basis.</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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<td><strong>Systems Engineering (ElectroMechanical Systems), BEng (Hons) (SIT-DigiPen Singapore Joint Degree)</strong></td>
<td>Completed a full-time local polytechnic Diploma. Applicants may be granted exemptions from individual modules on a case-by-case basis, depending on the content of previous modules completed and grade earned.</td>
<td>Offered General Paper (GP) or Knowledge &amp; Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements. ▶ Pass in one of the following H2 subjects (Mathematics, Physics or Computing); or a pass in H1 Mathematics</td>
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<td><strong>Electrical Power Engineering, BEng (Hons) (SIT-NU Joint Degree)</strong>*</td>
<td>Completed a full-time local polytechnic Diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</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 (MTL) requirements.</td>
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<td>▶ Marine Engineering, BEng (Hons) (SIT-NU Joint Degree) ▶ Naval Architecture, BEng (Hons) (SIT-NU Joint Degree) ▶ Offshore Engineering, BEng (Hons) (SIT-NU Joint Degree)</td>
<td>Completed a full-time local polytechnic Diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</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 (MTL) requirements.</td>
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<td><strong>Mechanical Design and Manufacturing Engineering, BEng (Hons) (SIT-NU Joint Degree)</strong></td>
<td>Completed a full-time local polytechnic Diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</td>
<td>Offered General Paper (GP) or Knowledge &amp; 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</td>
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<td><strong>Aerospace Engineering, BEng (Hons) (SIT-UofG Joint Degree)</strong></td>
<td>Completed a full-time local polytechnic Diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</td>
<td>Offered General Paper (GP) or Knowledge &amp; 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</td>
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<td><strong>Civil Engineering, BEng (Hons) (SIT-UofG Joint Degree)</strong></td>
<td>Completed a full-time local polytechnic Diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</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 (MTL) requirements.</td>
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<td><strong>Mechanical Engineering, BEng (Hons) (SIT-UofG Joint Degree)</strong></td>
<td>Completed a full-time local polytechnic Diploma. Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.</td>
<td>Offered General Paper (GP) or Knowledge &amp; 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</td>
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Note:
^ Please refer to SingaporeTech.edu.sg for the detailed list of relevant diplomas.
* Graduates of the BEng programmes may choose to continue to take the Master of Engineering Technology degree (MEngTech).
For up-to-date information, please refer to SingaporeTech.edu.sg.
OTHER PROGRAMMES OFFERED UNDER ENGINEERING

ELECTRICAL ENGINEERING & INFORMATION TECHNOLOGY

DEGREE PROGRAMME
➢ BSc

CAMPUS LOCATION
➢ SIT@SP Building

ELIGIBILITY¹
➢ Relevant Polytechnic Diploma Holders
➢ A Level/IB Diploma/NUS High School Diploma Holders

Based on the five pillars of Electrical Engineering and Information Technology — electrical engineering, information technology, mathematics, physics and signals and systems, this interdisciplinary programme broadens the educational scope to meet today’s evolving challenges. In this digital age where technical innovations greatly influence our everyday life, students will be offered a head start in fundamental engineering principles and application-based skills in innovative product development. Students will have a choice of specialisation in Microelectronics, Integrated Circuit Design or Automation.

¹ Visit SingaporeTech.edu.sg for the list of relevant qualifications.