As the bedrock on which every modern society is built, engineering plays a very important role in all our lives. From tackling vital issues such as delivering clean water and renewable energy to our household and industries, increasing our land size through land reclamation, to improving our quality of life by the invention of innovative and non-invasive medical devices, engineers will always be a mainstay in any developed society. Pervasive connectivity, which enables learning and knowledge sharing anytime and everywhere, has seamlessly penetrated into our daily lives. All these have been attributed to the works of engineers, without whom, we would not be able to do the things we all take for granted.

SiT SINGAPORE INSTITUTE OF TECHNOLOGY

2017

SingaporeTech.edu.sg

ENGINEERING

SINGAPORE INSTITUTE OF TECHNOLOGY

Sustainable Infrastructure Engineering (Building Services), MEngTech and BEng (Hons)

Sustainable Infrastructure Engineering (Land), MEngTech and BEng (Hons)

Telematics (Intelligent Transportation Systems Engineering), MEngTech and BEng (Hons)

SINGAPORE INSTITUTE OF TECHNOLOGY – DIGIPEN INSTITUTE OF TECHNOLOGY

Systems Engineering (ElectroMechanical Systems), BEng (Hons)

SINGAPORE INSTITUTE OF TECHNOLOGY – NEWCASTLE UNIVERSITY

Electrical Power Engineering, BEng (Hons)

Marine Engineering, BEng (Hons)

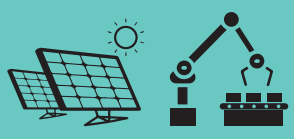
Mechanical Design and Manufacturing Engineering, BEng (Hons)

Naval Architecture, BEng (Hons)

Offshore Engineering, BEng (Hons)

SINGAPORE INSTITUTE OF TECHNOLOGY – UNIVERSITY OF GLASGOW

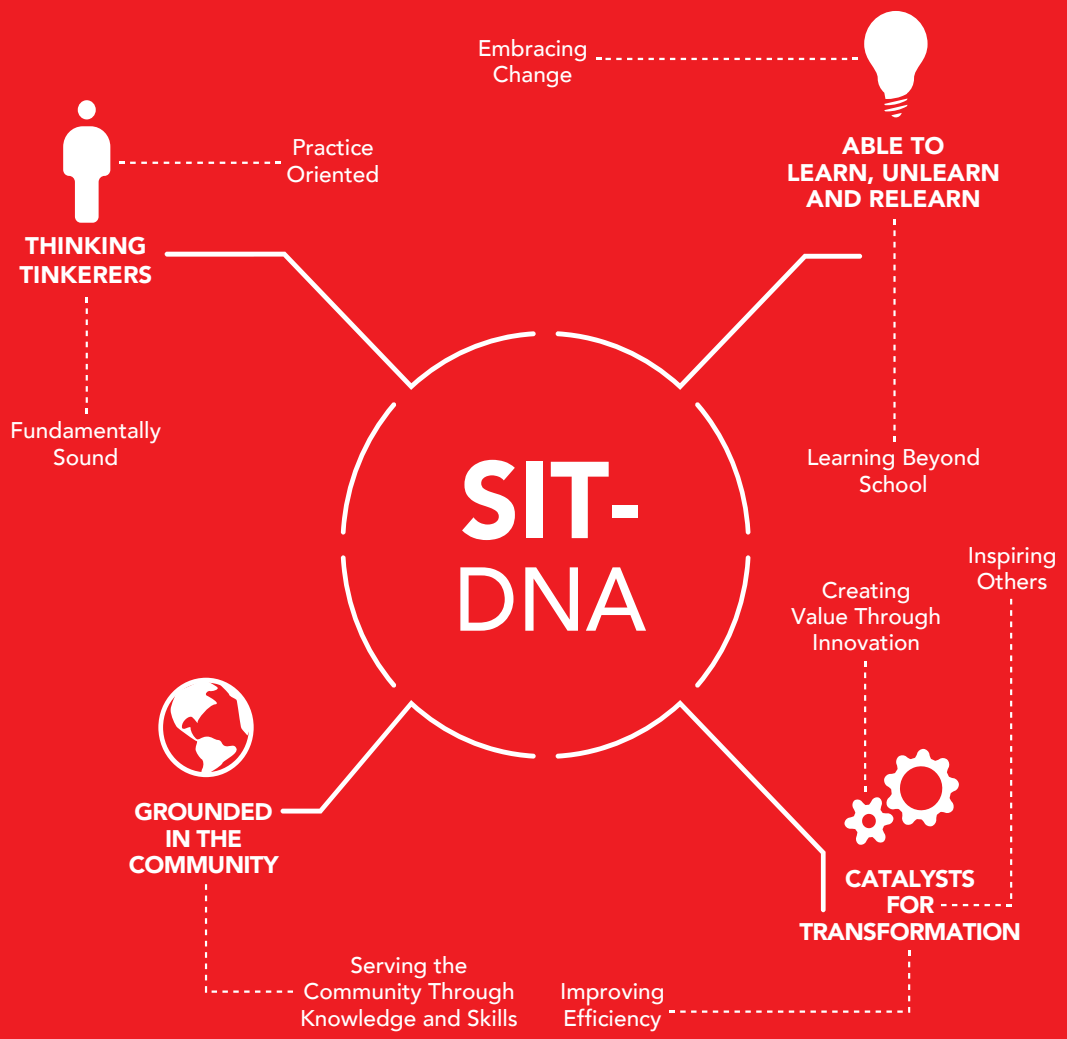
Civil Engineering, MEngTech and BEng (Hons)



SingaporeTech.edu.sg

CONTENTS

ABOUT SIT



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 an eight- to 12-month Integrated Work Study Programme (IWSP) which exemplifies the best of university-industry collaboration.

WHY ENGINEERING?

KEY ENABLER IN OUR TECHNOLOGICALLY DRIVEN AND KNOWLEDGE-BASED ECONOMY

At the 50th anniversary celebration of Singapore's Institution of Engineers, PM Lee Hsien Loong said, "Engineering matters for Singapore's future.[1]" As Singapore strives to become a Smart Nation, developing crucial expertise in various engineering sectors is needed more than ever before. Highly valued for their problem-solving and innovative skills, engineers are instrumental in contributing to the growth of engineering industries as they continually innovate products and components, and implement new and sustainable solutions in today's rapidly changing technological landscape.

SPECIALIST AND TRANSFERABLE SKILLS

At SIT, we offer a myriad of engineering programmes such as aerospace, building services, civil, electrical power, electronics, marine, mechanical, railway systems, telematics and more, which target the growth sectors of our economy. Through our applied learning pedagogy, students will be trained to become deep specialists in their respective engineering disciplines. They will develop technical skills and knowledge, and apply what they learn in the university to actual work situations via the Integrated Work Study Programme (IWSP).

The skill sets acquired in both the classroom and industry are transferable across industries - be it in critical problem-solving, decision making, innovation, project management, or communication skills, as they are highly valued by employers everywhere.

CAREER PROGRESSION OPPORTUNITIES

With strong signals from the government to grow the pool of engineers and rethink the value of engineering,[1] an engineering-based education at SIT will give students leverage through our symbiotic relationship with industry. Our engineering programmes have been developed through extensive consultation with industry, thus creating a curriculum that supports industry's needs in manpower development and innovation.

Students will be given ample opportunities to 'learn, unlearn and relearn' as the fundamentals learnt earlier are developed into advanced theories and concepts, and applied in industry during their IWSP or projects. This will make our engineering graduates highly adaptable and employable, as they gear up to contribute to the 'future-proofing' of Singapore's economy.

"Our programmes and the faculty behind them will assist you in building a solid foundation in engineering, which is your launch pad to a successful career and will also facilitate lifelong learning."

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

References

[1] Chong, ZL. Engineering Matters for Singapore's Future, Says PM Lee Hsien Loong. The Straits Times. (2016 Jul 2). Available from: http://www.straitstimes.com/politics/engineering-key-to-singapores-future-as-smart-nation-pm.

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

PROGRAMME INFORMATION

The Sustainable Infrastructure Engineering (SIE) (Building Services) programme is the first of its kind to be offered by an autonomous university in Singapore. Developed in consultation with the Building and Construction Authority (BCA) Singapore, the programme encompasses all the necessary engineering disciplines that are required for the building services industries in Singapore.

With the aim to groom students to be both practice-oriented and industry-ready, the programme will train students in the areas of Efficient Energy Management, Heating, Ventilation and Air Conditioning (HVAC), Indoor Environmental Quality, Human Health and Comfort, Sustainable Building Engineering, and Building Information Modelling (BIM). Students will also have the opportunity to obtain professional certifications in Green Mark Certification, Fire Services Safety Management, as well as Work Place 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 either graduate with a BEng (Hons) (based on six trimesters of study and minimum two trimesters of IWSP) or a MEngTech (based on eight trimesters of study and minimum two trimesters of IWSP). 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 practise and design mechanical and electrical systems in the Building Services Industries in Singapore.

PROGRAMME HIGHLIGHTS

HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)

This is an important technology to ensure indoor and outdoor environmental comfort, which is essential in tropical countries like Singapore. Students will be trained in all the HVAC fundamentals as well as key technical skills to design these systems.

SUSTAINABLE BUILDING ENGINEERING

Students will be trained on sustainable energy master planning, integrative design strategies, how issues related to carbon emissions affect building design and operational decisions, strategies for greening and maintaining new and existing buildings, as well as green building rating systems and standards.

BUILDING INFORMATION MODELLING (BIM)

BIM is a process that enhances the design, construction, and management of buildings. Students will learn the theories and principles used in BIM, and how to plan, design, construct, operate and maintain various buildings and infrastructures via BIM.

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

CURRICULUM STRUCTURE

The objective of the SIE (Building Services) programme is to train specialists for the building services industries. The programme will produce:

- Engineers who are specialised in HVAC, Sustainable Building Engineering and BIM
- Green Mark certified 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 and systems engineering (at the MEngTech level)

YEAR 1	**Trimester 1**	1. Mechanics of Engineering Materials 2. Engineering Mathematics I 3. C Programming 4. Measurements and Sensor Technology 5. Effective Communication
	Trimester 2	1. Dynamics of Machines 2. Engineering Mathematics IIA 3. Heat Exchanger and Heat Pump 4. Engineering Drawing for Building Services 5. Materials Selection for Engineering Structure
	Trimester 3	Break

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

YEAR 2	**Trimester 1**	1. Engineering Mathematics IIB 2. Fluid Mechanics 3. Electrical Systems 4. Sustainable Building Engineering 5. Mechanics of Solids
	Trimester 2	1. Engineering Mathematics III 2. Land Transport Discovery 3. Building Physics 4. BIM for Mechanical, Electrical, and Plumbing Design Studio 5. HVAC I 6. Career and Professional Development
	Trimester 3	1. HVAC II 2. Building Energy Simulations and Assessment 3. Facility Management using BIM 4. Building Services Engineering Discovery 5. Group Design Project I (e.g. Energy Conservation in Buildings or a BIM project)
YEAR 3	**Trimester 1**	Integrated Work Study Programme (IWSP)
	Trimester 2	
	Trimester 3	

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

YEAR 4	**Trimester 1**	1. Fire Engineering Fundamentals 2. Fire Safety Management 3. Automation and Control in Building 4. Work Place Safety and Health 5. Group Design Project II (e.g. Energy Conservation in Buildings or a BIM project)
	Trimester 2	**Energy Optimisation Focus** 1. Capstone Project I 2. Acoustic Engineering 3. Wind Energy and Industrial Aerodynamics 4. Indoor Environmental Quality Engineering 5. Lighting Technology for Building Services 6. Renewable Energy
	Trimester 3	**Human Factors and Systems Engineering Focus** **(Choose any four from the Focus Area of Interest list)** 1. Capstone Project II (Continue from I) 2. Change Management 3. Manufacturing Technology 4. Structure Vibration and Control 5. Focus Area Module #1 • Construction Management • Project Management

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 for building examination and authorisation.
- **Construction Safety Course for Project Managers (CSCPM)**
  Students will be trained in the 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 Specialist Course**
  The Fire Safety Specialist Course by the Singapore Civil Defence Force Academy is designed to train selected personnel in the technical areas of fire safety, and execution of processing and building inspection works. Students will learn the principles of various fire protection systems and the procedures for fire safety inspections.

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (BUILDING SERVICES)

INTEGRATED WORK STUDY PROGRAMME (IWSP)

Conducted over a period of eight- to 12-months, the IWSP provides undergraduates with the opportunity to gain industry experience, integrate theory with practice, and develop deep specialist skills in their chosen field.

Students will also be involved in day-to-day operations and face challenges just like an employee of the host organisation.

REGIONAL IMMERSION IN SUSTAINABLE ENGINEERING (RISE)

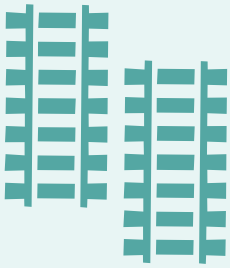
RISE is a unique programme which aims to enrich students' learning experiences. Participants get to visit key infrastructure facilities and projects in the region as well as gain first-hand experience in communicating with engineers, designers and operators who are working on various phases of a project such as those in design and construction.

CAREER OPPORTUNITIES

Statistics from government agencies and employment trends point to a great demand for graduates trained in Building Services, focussing on green buildings, HVAC and BIM. Graduates of this degree programme will be well-equipped with the knowledge and skills to easily assimilate into the building construction and services industries.

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (LAND)

PROGRAMME INFORMATION



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 chance to immerse themselves in the land transport industry through work stints with established organisations such as LTA, SMRT, SBS Transit, Singapore Technologies, Keppel Group 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 minimum two trimesters of IWSP) or a MEngTech (based on eight trimesters of study and minimum two trimesters of IWSP).

PROGRAMME HIGHLIGHTS

RAILWAY ENGINEERING

Students will be introduced to Railway Signalling, Control, and Communications principles which include multiple-aspect signalling, interlocking, train detection, automatic train control, communication-based train control, data transmission, telecommunication networks, transmission media, train operation control centres, and station signal control panels. Rolling Stock and Permanent Way Systems, and Safety Standards/Legislation/Best Practices will also be covered.

TOTAL PREVENTIVE MAINTENANCE (TPM)

The programme covers Total Preventive Maintenance (TPM) concepts and techniques including preventive maintenance, autonomous maintenance, maintainability improvement, maintenance prevention, and PM analysis. TPM also relates to other technical maintenance disciplines like Reliability Centred Maintenance, Instruments Protective Function and Risk Based Inspections.

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (LAND)

CURRICULUM STRUCTURE

YEAR 1	**Trimester 1**	1. Mechanics of Engineering Materials 2. Engineering Mathematics I 3. C Programming 4. Measurements and Sensor Technology 5. Effective Communication
	Trimester 2	1. Dynamics of Machines 2. Engineering Mathematics IIA 3. Heat Exchanger and Heat Pump 4. Engineering Design Graphics 5. Materials Selection for Engineering Structure
	Trimester 3	Break
YEAR 2	**Trimester 1**	1. Engineering Mathematics IIB 2. Fluid Machineries 3. Engineering Electronics and Instrumentation 4. NDT I 5. Mechanics of Solids
	Trimester 2	1. Engineering Mathematics III 2. Land Transport Discovery+ 3. Marine Transport Discovery+ 4. Aerospace Engineering Discovery+ 5. Career and Professional Development Course
	Trimester 3	1. Railway Signalling and Communications 2. Rolling Stock and Permanent Way Systems 3. NDT II 4. Total Preventive Maintenance 5. Lean and Quick Response Repair 6. Design Project I (e.g. Underground System Design)

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (LAND)

YEAR 3	**Trimester 1**	Integrated Work Study Programme (IWSP)
	Trimester 2	
	Trimester 3	
YEAR 4	**Trimester 1**	1. Railway Supervisory Control and Data Acquisition 2. Safety Standards/Legislation/Best Practices 3. Statistical Process Control 4. Remanufacturing of Engineering Components 5. Design Project II (e.g. High Speed Train Design)
	Trimester 2	1. Capstone Project 2. Vehicle Propulsion 3. Power Engineering 4. NDT III 5. Composite Materials 6. Project Management
	Trimester 3	1. Capstone Project 2. Change Management 3. Systems Engineering 4. Manufacturing Technology 5. Structure Vibration and Control

[+]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.

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN SUSTAINABLE INFRASTRUCTURE ENGINEERING (LAND)

INTEGRATED WORK STUDY PROGRAMME (IWSP)

Conducted over a period of eight- to 12-months, the IWSP provides undergraduates with the opportunity to gain industry experience, integrate theory with practice, and develop deep specialist skills in their chosen field.

Students will also be involved in day-to-day operations and face challenges just like an employee of the host organisation.

REGIONAL IMMERSION IN SUSTAINABLE ENGINEERING (RISE)

RISE is a unique programme which aims to enrich students' learning experiences. Participants will visit key infrastructure facilities and projects in the region and gain first-hand experience in communicating with engineers, designers and operators who are working on various phases of a project such as those in design and construction.

CAREER OPPORTUNITIES

The SIE (Land) programme and curriculum have been developed with support from various organisations in the land transport industry such as LTA, SMRT, SBS Transit, Singapore Technologies, Keppel Group and Sembcorp Industries. Graduates will be equipped with the necessary knowledge and skills for rewarding careers in the industry.

INDUSTRY ADVISORY COMMITTEE

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

Mr TAN Cheng Guan (Chairperson)
Executive Vice President and Head
Group Business Development and Commercial
Sembcorp Industries Ltd

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

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 MAH Chi Jui
Senior Vice President and Chief Engineering Management Officer
ST Kinetics Ltd

Mr Vincent TAN Peng Hock
Senior Vice President
Corporate Services and Rail Operations
SMRT Corporation Ltd

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN TELEMATICS (INTELLIGENT TRANSPORTATION SYSTEMS ENGINEERING)

PROGRAMME INFORMATION

The Telematics (Intelligent Transportation Systems Engineering) programme is the first of its kind in Singapore which consists of two interdisciplinary fields – Vehicular Telematics and Intelligent Transportation Systems (ITS) Engineering.

With an emphasis placed on the enhancement of our public transport systems, ITS will be the mainstay for managing and optimising the limited road space in Singapore. Vehicles of tomorrow will be capable of communicating with nearby vehicles wirelessly and share useful information on their surroundings, providing commuters and motorists with an enriched travel experience. The primary driver for such connected vehicles and inter-vehicle co-operative application is the enhancement of safety for both motorists and pedestrians, which includes telematics and vehicular communication technologies such as advanced driver-assistance applications to alert motorists on road safety, dynamic routing, intelligent parking guidance and real-time traffic news delivery, amongst others.

Developed with support from organisations such as LTA, ST Electronics, NCS and Continental Automotive Singapore Pte Ltd, 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. Students have the option to either graduate with a BEng (Hons) (based on six trimesters of study and minimum two trimesters of IWSP) or a MEngTech degree (based on eight trimesters and minimum two trimesters of IWSP), which have a strong emphasis on ITS and automotive engineering.

PROGRAMME HIGHLIGHTS

INDUSTRIAL IMMERSION PROGRAMME (IIP)

Students have the opportunity to visit relevant companies in telematics, automotive engineering or ITS in Singapore and overseas to understand their newest developments.

TREND ANTENNA

Students have the opportunity to participate in the Trend Antenna programme developed by Continental Automotive Singapore Pte Ltd, allowing them to be at the forefront of cutting-edge technologies in the automotive industry. With a vision to shape the future of mobility, students will gain valuable experiences while generating new ideas, researching on technologies, prototyping ideas, as well as developing value chain and business models.

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN TELEMATICS (INTELLIGENT TRANSPORTATION SYSTEMS ENGINEERING)

CURRICULUM STRUCTURE

YEAR 1	**Trimester 1**	1. Engineering Mathematics I 2. Newtonian Mechanics and Waves 3. Electronic Circuits 4. Introduction to Programming 5. Technical Communication I
	Trimester 2	1. Engineering Mathematics II 2. Electricity and Magnetism 3. Digital Systems 4. Object Oriented Programming 5. Linear Signals and Systems
	Trimester 3	Break
YEAR 2	**Trimester 1**	1. Sensor Technologies 2. Embedded System Design 3. Instrumentation and Displays 4. Database and Information System 5. Career Professional Development
	Trimester 2	1. Wireless Communications 2. RF Engineering and Electromagnetic Compatibility 3. Operating Systems and Automotive OS 4. Internet Fundamentals and Web Programming 5. Technical Communication II
	Trimester 3	Integrated Work Study Programme (IWSP)

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN TELEMATICS (INTELLIGENT TRANSPORTATION SYSTEMS ENGINEERING)

YEAR 3	**Trimester 1**	Integrated Work Study Programme (IWSP)
	Trimester 2	1. Group Design Project 2. Traffic Regulations, Safety and Standards 3. Traffic Signal and Toll Systems 4. Systems and Software Engineering 5. Audio and Image Processing 6. Business and Project Management
	Trimester 3	1. Group Design Project 2. Transport Management 3. Infotainment Technologies 4. Automotive Electronics 5. Car Interconnects and Vehicular Networks 6. Professional Ethics and Engineers in Society
YEAR 4	**Trimester 1**	1. Capstone Project 2. Transport Models and Simulation 3. ITS Mobility and Services 4. ITS Location Based Services 5. Green Car Technologies
	Trimester 2	1. Capstone Project 2. ITS Architectures and Systems 3. GIS and Navigation 4. Road Safety Technologies 5. Self-Driving Vehicles
	Trimester 3	GRADUATE

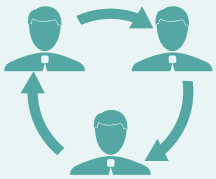
MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN TELEMATICS (INTELLIGENT TRANSPORTATION SYSTEMS ENGINEERING)

INTEGRATED WORK STUDY PROGRAMME (IWSP)

Conducted over a period of eight months, the IWSP provides undergraduates the opportunity to gain industry experience, integrate theory with practice, and develop deep specialist skills in their chosen field.

Students will also be involved in day-to-day operations and face challenges similar to an employee of the host organisation.

CAREER OPPORTUNITIES



Telematics (ITS Engineering) is a unique programme with a curriculum developed with support from various organisations in the land transport and automotive industry such as LTA, Singapore Technologies, NCS and Continental Automotive Singapore Pte Ltd. Students will gain the necessary knowledge and skills to embark on a rewarding career in the industry.

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN TELEMATICS (INTELLIGENT TRANSPORTATION SYSTEMS ENGINEERING)

INDUSTRY ADVISORY COMMITTEE

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

Mr ANG Kim Siah
Senior Vice President
ST Electronics (Info-Comm Systems)

Dr CHIN Kian Keong
Group Director
Land Transport Authority

Mr LO Kien Foh
Managing Director
Continental Automotive Singapore Pte Ltd

Mr SING Mong Kee
Director
Keespires Consultancy

ABOUT DIGIPEN INSTITUTE OF TECHNOLOGY

DigiPen
INSTITUTE OF TECHNOLOGY
SINGAPORE

DigiPen Institute of Technology (DigiPen) is a dedicated, world-renowned leader in education and research in computer interactive technologies. Committed to fostering academic growth and inspiring creativity, DigiPen is the first school in the world to offer a bachelor's degree in game development. Students will be empowered to become either one of these skilled professionals — software developer, computer scientist, engineer, designer and digital artist, through DigiPen's wealth of experience in the game industry. Located in Redmond, Washington, USA, with branch campuses in Singapore and Bilbao, Spain, DigiPen offers undergraduate and graduate degrees in disciplines related to video game design and development, hardware and software engineering applied to simulation, computer science, fine arts and digital art production, as well as sound design and youth programmes.

DigiPen (Singapore) students have won 16 major awards from the Independent Games Festival, Tokyo Game Show, and other international competitions. Graduates of DigiPen (Singapore) have gone on to work on ground-breaking game franchises, such as Bungie's Destiny, and have joined some of the top game and animation studios in Singapore — including Ubisoft, Lucasfilm, Koei Tecmo and more.

singapore.digipen.edu

BACHELOR OF ENGINEERING WITH HONOURS IN SYSTEMS ENGINEERING (ELECTROMECHANICAL SYSTEMS)

PROGRAMME INFORMATION

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 (DigiPen).

PROGRAMME HIGHLIGHTS

AN INTEGRATION OF DIFFERENT SUB-DISCIPLINES OF ENGINEERING INTO ONE

Systems engineering transcends the traditional approaches to engineering by integrating diverse disciplines of mechanical, electrical, electronic and computer engineering to produce functionality that is not achieved by a single discipline.

PROJECT-BASED PEDAGOGY

Using project-based learning, students will learn, integrate and apply what they have learnt to develop and effectively manage engineering systems in today's complex and interconnected world.

BACHELOR OF ENGINEERING WITH HONOURS IN SYSTEMS ENGINEERING (ELECTROMECHANICAL SYSTEMS)

CURRICULUM STRUCTURE

YEAR 1	**Trimester 1**	1. Computer Environment 2. Calculus and Analytic Geometry 1 3. Computer Aided Design 4. Engineering Fabrication 5. C Programming 6. Composition
	Trimester 2	1. Systems Engineering Project 1 2. Calculus and Analytic Geometry 2 3. Digital Electronics 1 4. C++ Programming 5. Systems and Software Engineering 6. Interpersonal and Work Communication
	Trimester 3	Break
YEAR 2	**Trimester 1**	1. Systems Engineering Project 2 2. Calculus and Analytic Geometry 3 3. Motion Dynamics 4. Embedded Systems Design 5. Systems and Project Management
	Trimester 2	1. Systems Engineering Project 3 2. Waves, Optics and Thermodynamics 3. Electric Circuits 4. ElectroMechanical Design 5. Requirements Engineering and Systems Architecture 6. Career Planning and Development
	Trimester 3	Overseas Immersion Programme (OIP) 1. Linear Algebra 2. Differential Equations 3. Electricity and Magnetism 4. Digital Electronics 2 5. Advanced C/C++

BACHELOR OF ENGINEERING WITH HONOURS IN SYSTEMS ENGINEERING (ELECTROMECHANICAL SYSTEMS)

YEAR 3	**Trimester 1**	Integrated Work Study Programme (IWSP) 1. The Engineer and Society
	Trimester 2	Integrated Work Study Programme (IWSP)
	Trimester 3	Integrated Work Study Programme (IWSP) Break
YEAR 4	**Trimester 1**	1. Capstone Project 1 2. Discrete Mathematics 3. Control Systems 1 4. Data Structures 5. Systems Design and Analysis 6. Systems Modelling and Simulation
	Trimester 2	1. Capstone Project 2 2. Control Systems 2/Robotics 3. Risk and Decision Analysis 4. Systems Integration, Verification and Validation 5. Large Scale Systems
	Trimester 3	GRADUATE

BACHELOR OF ENGINEERING WITH HONOURS IN SYSTEMS ENGINEERING (ELECTROMECHANICAL SYSTEMS)

INTEGRATED WORK STUDY PROGRAMME (IWSP)

IWSP provides students with the opportunity to apply their studies in a professional environment. The duration of the IWSP for this programme is eight months to a year. In addition to building new technical competencies, students will also gain invaluable experience working alongside professionals in their chosen fields of study.

OVERSEAS IMMERSION PROGRAMME (OIP)

The Overseas Immersion Programme (OIP) is mandatory for SEEMS students. Students will spend one trimester at the DigiPen US campus and attend lectures, lab practice, and industry seminars. Students will interact with American professors and mentors while experiencing life in a different culture.

CAREER OPPORTUNITIES

Career opportunities in systems engineering are driven by increasing globalisation and technological advancements. As Singapore and the world continue to develop more interconnected devices and systems, the need for engineers with both component- and system-level knowledge will increase dramatically.

SEEMS graduates will be uniquely prepared to address these complex system design and development tasks. Potential entry-level positions for SEEMS graduates include systems engineer, design engineer, quality control engineer, project engineer, software engineer, software analyst, embedded systems engineer and electromechanical engineer. Graduates will have the knowledge and skills to pursue careers in industries such as transport, marine, defence and precision engineering.

BACHELOR OF ENGINEERING WITH HONOURS IN SYSTEMS ENGINEERING (ELECTROMECHANICAL SYSTEMS)

INDUSTRY ADVISORY COMMITTEE

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

ABOUT NEWCASTLE UNIVERSITY

Newcastle University
UK | Malaysia | Singapore

Newcastle University (NU) is a member of the Russell Group, comprising the United Kingdom's 24 leading research-intensive universities, and is acclaimed for its multidisciplinary research, focussing on three societal challenges — ageing and health, sustainability and social inclusion. Noted for its teaching excellence and preparedness of its graduates for their professional careers, NU has attained the highest rating of five plus QS Stars by QS World University Rankings. Besides its home base in the city of Newcastle upon Tyne, NU now has a strong and growing presence in London, Malaysia and Singapore, with a total student population of around 25,000.

With its origins tracing back to 1834, the founding of Armstrong College in 1871 propelled the introduction of fundamental subjects such as chemistry, mathematics and physics to the university. NU collaborates with SIT to jointly deliver six undergraduate programmes in Singapore that offer a modern and industrially relevant interpretation of the subject in which students will develop skills, knowledge and understanding, in preparation for a successful and satisfying professional career ahead.

www.ncl.ac.uk

BACHELOR OF ENGINEERING WITH HONOURS IN ELECTRICAL POWER ENGINEERING

PROGRAMME INFORMATION

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 the 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 the SIT-NU EPE 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 theoretically-grounded and practice-oriented. This will equip them with the necessary technical competence, tools and personal skills that will enable them to continue 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.

PROGRAMME HIGHLIGHTS

This degree programme specialises in the domain of Electrical Power Engineering with emphasis on:

- Electrical Power Generation
- High Voltage Technology
- Electrical Power Transmission and Distribution
- Power Electronics
- Electrical Machines and Drives
- Renewable Energy

BACHELOR OF ENGINEERING WITH HONOURS IN ELECTRICAL POWER ENGINEERING

CURRICULUM STRUCTURE

YEAR 1

1. Circuit Theory
2. Electronics
3. Electricity and Magnetism
4. Signals and Communications
5. C Programming
6. Engineering Mathematics I
7. Engineering Mathematics II
8. Technical Writing and Effective Communication

YEAR 2

1. Automatic Control
2. Electrical Systems
3. Analogue Electronics
4. Computer Systems and Microprocessors
5. Digital Electronics
6. Electromagnetic Fields and Waves
7. Signals and Systems
8. Project and Career Professional Development
9. Accounting, Finance and Law for Engineers

Overseas Immersion Programme (OIP)
Integrated Work Study Programme (IWSP)

YEAR 3

Integrated Work Study Programme (IWSP)
1. State Space Analysis and Controller Design
2. Electrical Machines and Generators
3. Power Electronics
4. Generation Transmission and Distribution
5. Renewable Energy Systems
6. High Voltage Technology
7. Capstone Project

BACHELOR OF ENGINEERING WITH HONOURS IN ELECTRICAL POWER ENGINEERING

INTEGRATED WORK STUDY PROGRAMME (IWSP)

Students of the joint programme will undergo six months of Integrated Work Study Programme (IWSP) at a company relevant to their area of study. The IWSP is an integral part of applied learning as it provides an opportunity for students to integrate what they have learnt in the classroom to what is practiced in the real world, and vice-versa. The extended period of IWSP, with students performing real work, also provides an opportunity for companies to evaluate the suitability of students as potential employees.

Besides producing practice-oriented graduates, IWSP will also be the platform through which students will be challenged during their work attachment stint to initiate innovative projects under the guidance of SIT's IWSP academic supervisors and company-appointed work supervisors. Through such projects, students will be given the opportunity to develop engineering solutions for the projects they have identified. In this way, the IWSP will be a key platform that contributes to the inculcation of the SIT-DNA in every student.

OVERSEAS IMMERSION PROGRAMME (OIP)

All students will have to complete a three-week attachment at the home campus of Newcastle University where they get to experience life as a student, living and studying in Newcastle, United Kingdom. The programme will include academic lectures, industry visits, library and career talks, research and literature review workshops to prepare students for their final-year dissertation projects, as well as visits to local companies, museums and key cultural sites.

CAREER OPPORTUNITIES

Graduates from the EPE programme are needed in diverse sectors:

- Electrical Power Generation
- Electrical Power Transmission and Distribution
- Renewable Energy
- Smart Grid
- Land Transportation
- Power and Automation
- Oil and Gas

BACHELOR OF ENGINEERING WITH HONOURS IN

- MARINE ENGINEERING
- NAVAL ARCHITECTURE
- OFFSHORE ENGINEERING

PROGRAMME INFORMATION

The Marine programmes, jointly offered by SIT and Newcastle University, are three-year direct honours degrees in various disciplines within marine technology. 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 either one of these specialisations – Marine Engineering, Naval Architecture and 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 platforms. Naval Architecture and Offshore Engineering students will learn about the engineering behind the design, structure, operation and management of ships and other large floating structures. Marine Engineering students will be exposed to marine engineering systems, from the main propulsion engines to auxiliary machinery like power generators, pumps, heat exchangers and other machineries within water, air and hydraulic systems.

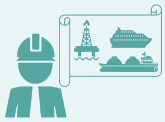
PROGRAMME HIGHLIGHTS

UNIQUE AND APPLIED LEARNING CURRICULA

The Marine Engineering, Naval Architecture and Offshore Engineering curricula are designed not only to meet the manpower needs of local industries, but also to manifest Singapore's role as a global marine and offshore engineering centre through SIT's applied learning emphasis, enabling our graduates to be both practice-oriented and industry-ready.

EXTENSIVE INDUSTRY INVOLVEMENT

These programmes include a high level of industry involvement to impart the latest industry best practices and regulatory requirements to students. This community of students, industry leaders and practitioners, professional bodies and dedicated academics brings about a symbiotic relationship beyond the academic level, allowing students to create a network of invaluable contacts within the industry.



HOLISTIC MARINE GRADUATES

Designed with a strong embellishment of the SIT-DNA, the programmes aim to produce socially responsible graduates who understand the environmental impacts within and across various engineering disciplines.

BACHELOR OF ENGINEERING WITH HONOURS IN

- MARINE ENGINEERING
- NAVAL ARCHITECTURE
- OFFSHORE ENGINEERING

CURRICULUM STRUCTURE

YEAR 1

Fundamentals

1. Materials in the Marine Environment
2. Marine Mechanics IA
3. Engineering Mathematics
4. Marine Engineering IA
5. Naval Architecture IA
6. Electrical Engineering I
7. Marine Mechanics IB
8. Engineering Mathematics and Statistics
9. Marine Engineering IB
10. Naval Architecture IB

YEAR 2

Core

1. Analytical Methods in Marine Technology
2. Marine Engineering IIA
3. Marine Structures IA
4. Ship Resistance
5. Introduction to Business Management
6. Naval Architecture II
7. Marine and Offshore Production Management
8. Marine Engineering IIB
9. Marine Structures IB
10. Marine Propulsion

Marine Engineering	Naval Architecture	Offshore Engineering
11. Marine Electrical Engineering	11. Marine Dynamics	11. Marine Dynamics

12. Marine Transport Business#
13. Drilling Engineering#

Overseas Immersion Programme (OIP)

Integrated Work Study Programme (IWSP)

#This module will be conducted over seven weeks.

BACHELOR OF ENGINEERING WITH HONOURS IN

- MARINE ENGINEERING
- NAVAL ARCHITECTURE
- OFFSHORE ENGINEERING

YEAR 3

Integrated Work Study Programme (IWSP)

Specialisation

1. Capstone Project and Report

Marine Engineering	Naval Architecture	Offshore Engineering
2. Marine Engineering Design	2. Ship Design	2. Offshore Engineering Design
3. Marine Engineering III	3. Marine Structures II	3. Marine Structures II
4. Internal Combustion Engines	4. Advanced Ship and Offshore Hydrodynamics	4. Advanced Ship and Offshore Hydrodynamics
5. Dynamic Modelling and Simulation	5. Advanced Resistance and Propulsion	5. Subsea and Pipeline Engineering

BACHELOR OF ENGINEERING WITH HONOURS IN

- MARINE ENGINEERING
- NAVAL ARCHITECTURE
- OFFSHORE ENGINEERING

INTEGRATED WORK STUDY PROGRAMME (IWSP)

The Integrated Work Study Programme (IWSP), a key differentiating factor from other related degree programmes, will see students undergoing a credited 26-week long full-time work engagement at a company relevant to their area of study. During this period, students will apply the knowledge, practical and professional skills acquired during their earlier years of study in the IWSP. At the same time, students will gain valuable work experience and apply it to a Capstone and/or design project during their penultimate year of study.

OVERSEAS IMMERSION PROGRAMME (OIP)

All students will have to complete a three-week attachment at the home campus of Newcastle University where they get to live and study in Newcastle, United Kingdom. The programme itinerary will include library and career talks, seminars, research and literature review workshops to prepare students for their final-year dissertation projects, as well as visits to companies, museums and key cultural sites.

CAREER OPPORTUNITIES

Graduates can look forward to careers in:

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

BACHELOR OF ENGINEERING WITH HONOURS IN MECHANICAL DESIGN AND MANUFACTURING ENGINEERING

PROGRAMME INFORMATION

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, 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 process improvement and innovation in manufacturing as a specialisation including topics on 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 curriculum, students will also work on engineering design and productivity projects which may be carried through to their studies as Capstone Projects in the penultimate year of the programme. In order to add further value and provide practical skills that are relevant to the industry, students will have the opportunity to pursue the Lean Six Sigma professional certification. MDME graduates will be practice-oriented and work-ready to develop solutions for the engineering sector and enhance processes in the manufacturing industry.

PROGRAMME HIGHLIGHTS

A ROBUST AND INDUSTRY-RELEVANT CURRICULUM

Students will be taught a curriculum that synergises fundamental mechanical engineering knowledge with recent technological advancements in mechatronics and manufacturing principles. They will be equipped with the pre-requisite knowledge that encourages critical thinking and analytical skills which will prepare them for the engineering profession and also facilitate their progression to the chartered professional engineer status. Graduates are expected to meet the growing manpower demands and expertise requirements of local industries in the areas of design, industrial automation and productivity for manufacturing.

INTEGRATED WORK STUDY PROGRAMME (IWSP)

Students will undertake their IWSP in engineering and manufacturing industries which provide excellent opportunities to gain product design and operations management experience.

BACHELOR OF ENGINEERING WITH HONOURS IN MECHANICAL DESIGN AND MANUFACTURING ENGINEERING

CURRICULUM STRUCTURE

YEAR 1

1. Engineering Mathematics I
2. Engineering Mathematics II
3. Statics
4. Mechanics of Materials
5. Materials for Engineers
6. Fundamentals of Thermofluids
7. Programming
8. Electrical Circuits and Electronics
9. Fabrication and Prototyping Practices
10. Concurrent Design and Manufacturing

YEAR 2

1. Dynamics
2. Control of Dynamic Systems
3. Design of Mechanical Systems
4. Electromechanical Systems Technology
5. Real-Time Systems
6. Applications of Thermofluids
7. Developments in Materials and Processes
8. Materials and Manufacturing
9. Lean Manufacturing and Six Sigma
10. Engineering Economics and Project Management
11. Finance, Law and Standards for Engineers
12. Technical Writing and Effective Communication
13. Career and Professional Development

Overseas Immersion Programme (OIP)
Integrated Work Study Programme (IWSP)

YEAR 3

Integrated Work Study Programme (IWSP)

1. Engineering Systems Modelling and Simulation
2. Mechatronics Systems
3. Robotics
4. Industrial Automation
5. Manufacturing Systems Management
6. Capstone Project

BACHELOR OF ENGINEERING WITH HONOURS IN MECHANICAL DESIGN AND MANUFACTURING ENGINEERING

INTEGRATED WORK STUDY PROGRAMME (IWSP)

Students will undergo a 26-week work attachment at a company relevant to their area of study, which provides an excellent opportunity to integrate what they have learnt in the classroom to what is practiced in the real world. The extended period of IWSP, with students performing real work, also provides an opportunity for companies to evaluate the suitability of students as potential employees. Besides producing practice-oriented graduates, IWSP will be the platform through which students are challenged during their work attachment stint to initiate innovative projects under the guidance of SIT's IWSP and company-appointed supervisors.

OVERSEAS IMMERSION PROGRAMME (OIP)

Students will have to undergo a three-week attachment at the home campus of Newcastle University where they get to experience life as a student in Newcastle, United Kingdom. The programme itinerary will include library and career talks, academic lectures, research and literature review workshops to prepare students for their final-year dissertation projects, as well as visits to engineering companies and key cultural sites.

CAREER OPPORTUNITIES

Engineers with specialist skills in mechanical design, mechatronics and manufacturing are generally needed in all vertical sectors of the engineering industry. Besides the existing aerospace, construction, electronics, marine and offshore, petrochemical processing, and precision engineering industries, SIT-NU MDME graduates can also join emerging job markets related to the fields of industrial automation, bioengineering, and transport systems. SIT-NU MDME graduates can look forward to a promising and exciting career in these industries as an engineer in a broad range of areas such as design, logistics, manufacturing, procurement, project management, quality assurance, and R&D.

ABOUT UNIVERSITY OF GLASGOW

University of Glasgow

Founded in 1451, the University of Glasgow (UofG) is the fourth oldest university in the English-speaking world and is in the top 1% of universities in the world. UofG is a member of the distinguished Russell Group comprising the United Kingdom's 24 leading research-intensive universities, and is also a founding member of Universitas 21 – a network of universities established as an international reference point and resource for strategic thinking on issues of global significance.

Associated with seven Nobel Laureates, UofG has inspired thinkers from eminent scientist Lord Kelvin and distinguished engineer James Watt to the father of economics, Adam Smith. Through teaching informed by its broad portfolio of cutting-edge research funded by industry, research councils and governmental agencies, students will graduate with the skills needed to compete in a global workplace, and with friendships and networks that last a lifetime.

www.glasgow.ac.uk

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN CIVIL ENGINEERING

PROGRAMME INFORMATION

Note: The BEng (Hons) Civil Engineering degree programme is jointly offered by SIT and the University of Glasgow (UofG).

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 the face of 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 apply 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 some relevant working experience before coming back to pursue the MEngTech degree later. In this way, they can study at a pace that best suits their individual needs and abilities. Strong emphasis is placed on the industrial relevance in the curriculum development of 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.

PROGRAMME HIGHLIGHTS

Structural Design

Construction Technology

Building Information Modelling (BIM) for Civil Engineers

Design Project/Overseas Immersion Programme at Glasgow

Capstone Project

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN CIVIL ENGINEERING

CURRICULUM STRUCTURE

YEAR 1	**Trimester 1**	1. Civil Engineering and Sustainable Built Environment 2. Engineering Physics 3. Engineering Mathematics I 4. Civil Engineering Skills 5. Statics and Structural Mechanics
	Trimester 2	1. Graphical Communication 2. Effective Communication 3. Engineering Mathematics II 4. Fluid Mechanics 5. Civil Engineering Materials 6. Engineering Geology and Soil Mechanics
	Trimester 3	Break
YEAR 2	**Trimester 1**	1. Engineering Mathematics III 2. Hydraulics and Hydrology 3. Structural Analysis I 4. Geotechnical Engineering 5. BIM for Civil Engineers
	Trimester 2	1. Transportation Engineering 2. Environmental Engineering 3. Structural Analysis II 4. Structural Design 5. Professional Communication and Development
	Trimester 3	1. Foundation Engineering 2. Construction Technology 3. Design of Steel and Concrete Structures 4. Seminar and Site Visit 5. Design Project/Overseas Immersion Programme (OIP) at Glasgow

Note: The BEng (Hons) Civil Engineering programme is jointly offered by SIT and University of Glasgow (UofG).

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN CIVIL ENGINEERING

YEAR 3	**Trimester 1**	Integrated Work Study Programme (IWSP)
	Trimester 2	Integrated Work Study Programme (IWSP)
	Trimester 3	1. Project Planning and Management 2. Civil Engineering Practices 3. Ground Engineering 4. Rail Engineering 5. Capstone Project

YEAR 4 (MEngTech)^	**Trimester 1**	**Core** 1. Practice of Professional Engineering 2. Structural Stability and Dynamics 3. Advanced Design of Concrete and Precast Structures 4. Advanced Material Technology 5. Computational Modelling of Complex Soil-Structure Problems		
	Trimester 2 *Three modules from a specialisation track and choose any other two specialisation modules or a MEngTech dissertation.*	**Structural Engineering** 1. Wind and Earthquake Engineering 2. Tall Buildings 3. Advanced Design of Steel and Composite Structures	**Geotechnical Engineering** 1. Advanced Foundation Engineering 2. Advanced Ground Engineering 3. Earth Retaining and Stabilising Structures	**Rail Engineering** 1. Advanced Rail Engineering I – Planning and Design 2. Advanced Rail Engineering II – Operations and Maintenance 3. Risk and Safety Management of Rail Infrastructures

^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 (UofG).

MASTER OF ENGINEERING TECHNOLOGY AND BACHELOR OF ENGINEERING WITH HONOURS IN CIVIL ENGINEERING

INTEGRATED WORK STUDY PROGRAMME (IWSP)

Students will undergo an eight-month continuous structured learning and work programme in the construction industry that exposes them to both design office and field/site supervision experience. The learning experience is more structured than an internship, with objectives and corresponding assessments in career and professional skills, integration of knowledge and practice, and innovation skills. In addition, the Capstone Project is embedded within the IWSP, and students will start to formalise and propose their projects during the first semester of IWSP with input from their industrial supervisors.

Field/site supervision experience is mandatory for professional registration and this experience can contribute to that accreditation and recognition of work experience required for registration as a resident engineer with IES/ACES.

OVERSEAS IMMERSION PROGRAMME (OIP)

Students will participate in an intensive three-week Overseas Immersion Programme (OIP) at the home campus of University of Glasgow where they get to experience life as a student in Glasgow, United Kingdom. The programme itinerary includes library and career talks, academic lectures, research and literature review workshops to prepare students for their final-year dissertation projects, as well as visits to companies, museums and key cultural sites.

The group project-based subjects covering both the conceptual and detailed aspects of design will be carried out during the OIP, involving different areas of the civil engineering discipline such as ground investigation, planning, transportation design, social, foundation design, structural design, and buildability of the construction.

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 careers in:

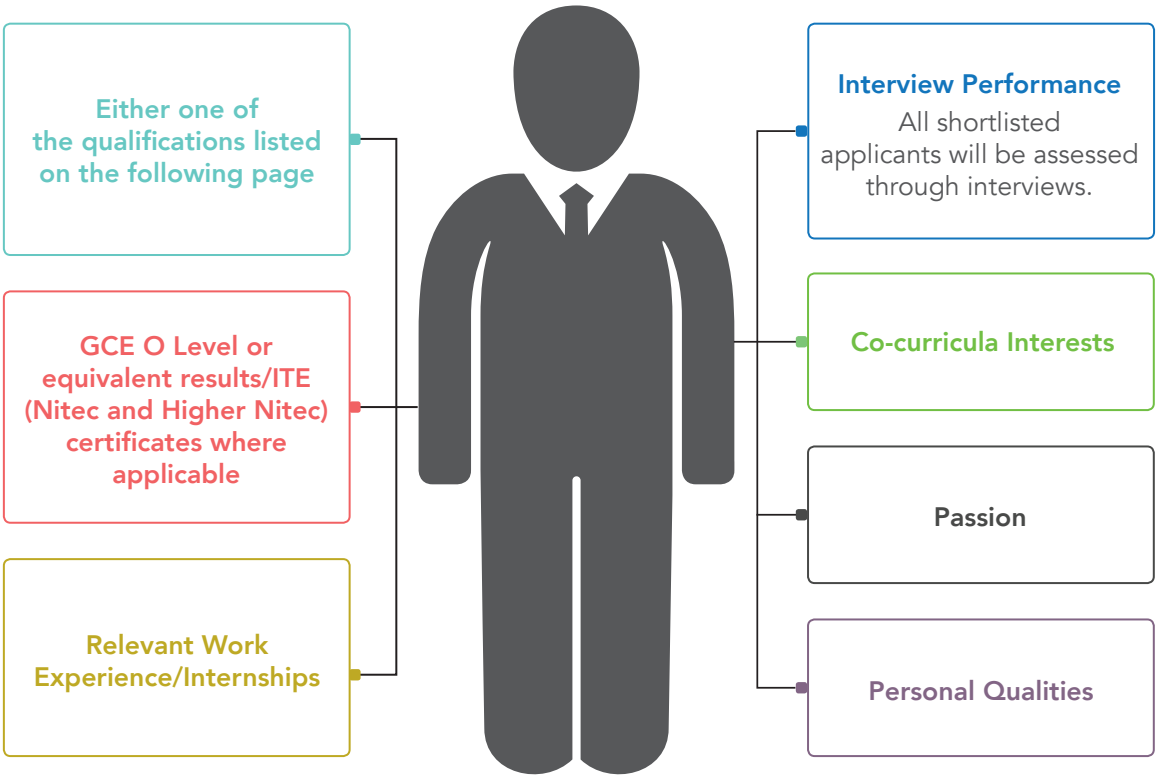
- Design Consultancy Firms
- Building and Construction
- Property Developers
- Facility Operators
- Government Agencies

*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 (UofG).

ADMISSION REQUIREMENTS

SIT adopts a holistic approach in assessing applicants for admission by considering the following criteria:



ADMISSION REQUIREMENTS

Degree Programme	Full-Time Polytechnic Diploma from Singapore	GCE A Level	International Baccalaureate Diploma (IB)	NUS High School Diploma	Other International Qualifications
Sustainable Infrastructure Engineering (Building Services), BEng (Hons)*	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.	Obtain passes in at least two A/H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements.	Obtain a grade five for at least two Higher Level (HL) and one Standard Level (SL) subjects and the IB Diploma while satisfying the Mother Tongue (MTL) requirements.	Obtain the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.	Must have completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.

Degree Programme	Full-Time Polytechnic Diploma from Singapore	GCE A Level	International Baccalaureate Diploma (IB)	NUS High School Diploma	Other International Qualifications
Sustainable Infrastructure Engineering (Land), BEng (Hons)*	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 engineering background, i.e. Diploma from other engineering disciplines, exemption of modules will be considered on a case-by-case basis.	Obtain passes in at least two A/H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements.	Obtain a grade five for at least two Higher Level (HL) and one Standard Level (SL) subjects and the IB Diploma while satisfying the Mother Tongue (MTL) requirements.	Obtain the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.	Must have completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.
Telematics (Intelligent Transportation Systems Engineering), BEng (Hons)*	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. For applicants with non-relevant diplomas, exemption from modules will be considered on a case-by-case basis.	Obtain passes in at least two A/H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements.	Obtain a grade five for at least two Higher Level (HL) and one Standard Level (SL) subjects and the IB Diploma while satisfying the Mother Tongue (MTL) requirements.	Obtain the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.	Must have completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.

Degree Programme	Full-Time Polytechnic Diploma from Singapore	GCE A Level	International Baccalaureate Diploma (IB)	NUS High School Diploma	Other International Qualifications
Systems Engineering (ElectroMechanical Systems), BEng (Hons) (SIT-DIGIPEN Joint Degree)	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.	Obtain passes in at least two A/H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements.	Obtain a grade five for at least two Higher Level (HL) and one Standard Level (SL) subjects and the IB Diploma while satisfying the Mother Tongue (MTL) requirements.	Obtain the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.	Must have completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.
Electrical Power Engineering, BEng (Hons) (SIT-NU Joint Degree)	Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.	Obtain passes in at least two A/H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements.	Obtain a grade five for at least two Higher Level (HL) and one Standard Level (SL) subjects and the IB Diploma while satisfying the Mother Tongue (MTL) requirements.	Obtain the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.	Must have completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.
• **Marine Engineering, BEng (Hons) (SIT-NU Joint Degree)** • **Naval Architecture, BEng (Hons) (SIT-NU Joint Degree)** • **Offshore Engineering, BEng (Hons) (SIT-NU Joint Degree)**	Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.	Obtain passes in at least two A/H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements.	Obtain a grade five for at least two Higher Level (HL) and one Standard Level (SL) subjects and the IB Diploma while satisfying the Mother Tongue (MTL) requirements.	Obtain the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.	Must have completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.

Degree Programme	Full-Time Polytechnic Diploma from Singapore	GCE A Level	International Baccalaureate Diploma (IB)	NUS High School Diploma	Other International Qualifications
Mechanical Design and Manufacturing Engineering, BEng (Hons) (SIT-NU Joint Degree)	Subject to approval, diploma applicants may be granted module exemptions, based on the modules taken during their diploma.	Obtain passes in at least two A/H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements.	Obtain a grade five for at least two Higher Level (HL) and one Standard Level (SL) subjects and the IB Diploma while satisfying the Mother Tongue (MTL) requirements.	Obtain the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.	Must have completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.
Civil Engineering, BEng (Hons) (SIT-UofG Joint Degree)*	Open to all full-time local polytechnic diploma holders.	Obtain passes in at least two A/H2 Level subjects and offered General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting while satisfying the Mother Tongue (MTL) requirements.	Obtain a grade five for at least two Higher Level (HL) and one Standard Level (SL) subjects and the IB Diploma while satisfying the Mother Tongue (MTL) requirements.	Obtain the NUS High School Diploma while satisfying the Mother Tongue (MTL) requirements.	Must have completed at least 12 years of formal education deemed as acceptable, equivalent qualifications to be considered for admission.

*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

TUM Asia

ELIGIBILITY

- Polytechnic Diploma Holders
- A Level/IB Diploma/NUS High School Diploma Holders

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING & INFORMATION TECHNOLOGY

Based on the five pillars of Electrical Engineering and Information Technology — electrical engineering, information technology, mathematics, physics, 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.

University of Glasgow

ELIGIBILITY

- Polytechnic Diploma Holders

BACHELOR OF ENGINEERING WITH HONOURS IN AERONAUTICAL ENGINEERING

Aeronautical Engineering is a highly-advanced discipline that explores how flight is possible and how flying vehicles are designed, powered, operated and controlled. This programme will enable students to analyse and understand the vehicles' behaviour, performance, propulsion and power systems, as well as perform detailed designs of structural components.

University of Glasgow

ELIGIBILITY

- Polytechnic Diploma Holders

BACHELOR OF ENGINEERING WITH HONOURS IN AEROSPACE SYSTEMS

All modern aircraft, from airliners to micro unmanned systems, rely on complex and comprehensive onboard systems. This programme requires students to bring together concepts from aeronautical, electrical and systems engineering to understand how these systems are designed, implemented and operated, as well as their effects on the operation, performance and safety of aerospace vehicles.

University of Glasgow

ELIGIBILITY

- Polytechnic Diploma Holders

BACHELOR OF ENGINEERING WITH HONOURS IN MECHANICAL DESIGN ENGINEERING

This programme will hone students' engineering capabilities and aptitude for the design of innovative products and systems. Through a combination of mechanical engineering and studio-based projects, they will also develop an optimum blend of knowledge and skills. Students will be equipped with the knowledge, understanding and skills for mechanical engineering and design with greener concepts, technologies and methodologies. With the need to keep up with industrial challenges and greener demands, this programme aims to produce creative engineers with the capabilities and aptitude for the design of novel engineering products, especially in key industries in Singapore such as aerospace, industrial automation, maritime and healthcare.

OTHER PROGRAMMES OFFERED UNDER ENGINEERING

University of Glasgow

ELIGIBILITY

- Polytechnic Diploma Holders

BACHELOR OF ENGINEERING WITH HONOURS IN MECHATRONICS

Mechatronics is an interdisciplinary field of engineering that encompasses high-level synergistic and functional integration of mechanical engineering, electrical/electronics engineering, computer and software engineering. It involves the research, design, implementation and manufacturing of intelligent engineered systems for smart products and processes. Through this programme, students will be equipped with the knowledge, understanding and skills for synergistic integration of mechanical engineering with electronics and intelligent computer control in the optimal design and manufacture of greener industrial products and processes. An industry-focussed programme, students will have various career opportunities to meet the increasing demand in greener products and processes, sustainable manufacturing, smart homes and buildings, and intelligent aids for the elderly and disabled.

SIT's overseas university partners may have programme-specific admission requirements. Applicants must ensure that all additional requirements are met in order to be considered for admission.

For details of the relevant diplomas and programme-specific admission requirements, please visit SingaporeTech.edu.sg.

SCHOLARSHIPS AT A GLANCE

SIT believes in creating opportunities for students to develop and achieve their goals, cultivating future leaders for Singapore's growing industries. With this vision, SIT substantially invests in its own scholarships, which aim to recognise students for their academic excellence, robust co-curricular record and strong leadership qualities. SIT scholars will contribute to the SIT community and be responsible global citizens.

Applications are open for the following SIT Scholarships:

	SIT Scholarship	SIT Mid-Term Scholarship	SIT Final-Year Scholarship
Coverage	• Subsidised tuition fees based on the prevailing cost of the degree programme for Singapore Citizens • Other miscellaneous fees		
Degree programme	All programmes	SIT-conferred degree programmes or SIT-joint degree programmes	All OU degree programmes
Eligibility	• SC or SPR • Outstanding academic results • Strong leadership qualities • Good CCA records	• SC or SPR • Outstanding academic results • Strong leadership qualities • Good CCA records • Completed 60 credits	• SC or SPR • Outstanding academic results • Strong leadership qualities • Good CCA records • Entering final year of degree programme

KEY: SC = Singapore Citizen **SPR = Singapore Permanent Resident**

SCHOLARSHIPS ADMINISTERED BY MOE-APPOINTED SECRETARIAT OFFICE

- Lee Kuan Yew-STEP Award
- Lee Hsien Loong Award
- University Engineering Scholarship

EXTERNAL AND BOND-FREE SCHOLARSHIPS SUPPORTED BY DONORS

For an extensive list of external and bond-free scholarships and details on how to apply, please refer to SingaporeTech.edu.sg

For the most up-to-date information on our scholarships, please visit SingaporeTech.edu.sg.

CONTACT US

SINGAPORE INSTITUTE OF TECHNOLOGY
SIT@Dover, 10 Dover Drive, Singapore 138683
Tel: +65 6592 1189 (Main Line)

STUDENT ADMISSION MATTERS
Tel: +65 6592 1136
Adm@SingaporeTech.edu.sg (Local students)
Adm.Intl@SingaporeTech.edu.sg (International students)

FINANCIAL ASSISTANCE AND SCHOLARSHIP MATTERS
Tel: +65 6592 1150
FAS@SingaporeTech.edu.sg (Financial Assistance matters)
Scholarships@SingaporeTech.edu.sg (Scholarship matters)

DEGREE PROGRAMME RELATED QUERIES
Tel: +65 6592 2021
AcdPrg@SingaporeTech.edu.sg

CAREER SERVICES
Tel: +65 6592 8150
CareerServices@SingaporeTech.edu.sg

ENTERPRISE & INNOVATION HUB
Tel: +65 6592 6917
EIHub@SingaporeTech.edu.sg

FINANCE, BILLINGS AND GIRO
Tel: +65 6592 8149
StudentFinance@SingaporeTech.edu.sg

REGISTRAR'S OFFICE
Tel: +65 6592 2091
Registrar@SingaporeTech.edu.sg

STUDENT LIFE MATTERS
Tel: +65 6592 1191
SLD@SingaporeTech.edu.sg

GIVING TO SIT
Tel: +65 6592 1138
Tel: +65 6592 1094
Advancement@SingaporeTech.edu.sg

OPERATING HOURS
Mondays to Fridays:
10:00 am to 5:00 pm
Closed on Saturdays,
Sundays and Public Holidays

Singapore Institute of Technology
SIT@Dover, 10 Dover Drive,
Singapore 138683

Registration Number: 200917667D

SingaporeTech
@SingaporeTech
@SingaporeTech

ENGINEERING