



BACHELOR OF ENGINEERING WITH HONOURS IN

TELEMATICS (INTELLIGENT TRANSPORTATION SYSTEMS ENGINEERING)

PROGRAMME INFORMATION

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

ITS plays an important role in enhancing our public transport systems, as well as managing and optimising the limited road space in Singapore. ITS continues to be the mainstay for delivering a convenient, safe and comfortable travel experience. An increasing vehicle population in our land-scarce city-state, coupled with changing social, economic and technological landscapes have brought forth new opportunities for growth and breakthroughs in transportation technologies, application and solutions.

Vehicles of tomorrow will have the capability to communicate with nearby vehicles wirelessly and share useful information on their surroundings, providing commuters and motorists with an enhanced travel experience. The primary driver for such connected vehicles and inter-vehicle cooperative application is the enhancement of safety for both motorists and pedestrians. The development of telematics technologies and vehicular communication technologies enable telematics applications such as advance driver-assistance applications to alert motorists on road safety, dynamic routing, intelligent parking guidance and real-time traffic news delivery, amongst others.

The Bachelor of Engineering with Honours in Telematics (ITS Engineering) is a four-year programme with a curriculum that has been developed with support from organisations such as LTA, ST Electronics, NCS and Continental Automotive Singapore Pte Ltd. Students will be equipped with electrical engineering and computer science core skills and ITS knowledge in order to work in this technically challenging field. Deep specialist skills in vehicular communication, telematics technologies and ITS engineering are much needed in these industries.

PROGRAMME CURRICULUM

To be awarded the Bachelor of Engineering with Honours in Telematics (Intelligent Transportation Systems Engineering), students will be required to complete eight trimesters of study and two trimesters of Integrated Work Study Programme (IWSP).

TRIMESTER 1

1. Engineering Mathematics
2. Newtonian Mechanics and Waves
3. Electronic Circuits
4. Introduction to Programming
5. Academic Writing and Speaking and 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



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. Academic Writing and Speaking and Technical Communication II

TRIMESTER 3

Integrated Work Study Programme (IWSP)

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

010101
001010



PROGRAMME HIGHLIGHTS

Industrial Immersion Programme (IIP)

Students will 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 will have the opportunity to participate in the Trend Antenna programme developed by Continental Automotive Singapore Pte Ltd. This programme allows students to be at the frontline of cutting-edge technologies and innovation in the automotive industry. Students will be expected to generate new ideas, research on technologies, prototype ideas, as well as develop value chain and possible business models.

INTEGRATED WORK STUDY PROGRAMME (IWSP)

IWSP is held over a span of eight months and will provide students 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 confront challenges just like an employee of the host organisation.

ADMISSION REQUIREMENTS

Diploma holders and A-Level students are welcome to apply. Students 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 students with non-relevant diplomas, exemption from modules will be considered on a case-by-case basis.

CAREER OPPORTUNITIES

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



INDUSTRY ADVISORY COMMITTEE

The Industry Advisory Committee members 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
National Computer Systems

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

 SingaporeTech
 @SingaporeTech
 @SingaporeTech

Contact Information
Undergraduate Student Admission
Tel: +65 6592 1136
Adm@SingaporeTech.edu.sg

All information is accurate at time of print.
SIT reserves the right to amend the
information without prior notice.
For the most up-to-date information,
please visit SingaporeTech.edu.sg.