TOMORROW'S NATION BUILDERS

SCAN ME

School of
Engineering

SCHOOL OF ENGINEERING

Engineers revolutionise cities and communities, improve the way we live, work and play, transform the future of healthcare with innovative biomedical inventions and develop disruptive digital technologies that make it all possible!

The COVID-19 pandemic has increased these demands for emerging technologies and technological advancements – and, most importantly, the future-driven engineers required to lead them.

As the world steps into the new normal, the School of Engineering will prepare you to be at the forefront of this exciting change as the various industries rebound from the pandemic.

Push the boundaries of modern engineering with the School's offering of 10 exciting diploma courses and a Common Entry Programme. You will receive broad-based training in core engineering areas before specialising in exciting fields such as advanced manufacturing, aerospace, aviation, sustainable energy, integrated facility management or biomedical engineering.

With quality lecturers, a robust technology innovation culture, prominent industry partners, a multi-disciplinary curriculum and many tie-ups with local and foreign universities, an engineering diploma from the School ensures that you will be equipped with the versatility and the edge you need to thrive in today's digital-first economy.

Get ready to engineer your bright future here – one dedicated to improving the world we live in!

. . . .

Common Entry Programme
- [T56] Common Engineering Programme

Full-Time Diploma Courses
- [T50] Aerospace Electronics
- [T51] Aerospace Engineering
- [T29] Architectural Technology & Building Services
- [T04] Aviation Management
- [T38] Biomedical Engineering
- [T43] Business Process & Systems Engineering
- [T13] Computer Engineering
- [T65] Electronics
- [T28] Integrated Facility Management
- [T66] Mechatronics

Application Enquiries
Tel   : 6788 2000
Email   : admissions@tp.edu.sg

Course Enquiries
Tel   : 6780 5144
Email   : enghotline@tp.edu.sg
Website   : www.tp.edu.sg/eng

For the latest tuition fees, visit:
www.tp.edu.sg/coursefees

MINIMUM ENTRY REQUIREMENTS

To be eligible for any of these diploma courses, you must have 5 GCE O Level subjects comprising:

English Language
Grades 1 - 7

Mathematics (Elementary/Additional)
Grades 1 - 6

Any one of the following subjects
Grades 1 - 6

Biology, Biotechnology, Chemistry, Combined Science, Computing/Computer Studies, Design & Technology, Electronics/ Fundamentals of Electronics, Physics/Engineering Science, Science (Chemistry, Biology), Science (Physics, Biology), Science (Physics, Chemistry)/Physical Science

Any two other subjects, excluding CCA

For details on ELR2B2 computation, visit: **www.tp.edu.sg/elr2b2**

FURTHER STUDIES

You can gain admission into a wide range of degree programmes at local and overseas universities in USA, UK, Australia and New Zealand. Advanced standing for specific modules, or up to two years exemption, may be given depending on the relevance of the degree programme.

COMMON ENGINEERING PROGRAMME

Scan for full details, or visit:
www.tp.edu.sg/t56

The Course

This programme is a common entry point to seven different engineering diploma courses. If you are keen to pursue an engineering career, but are not sure which of the many different engineering disciplines would suit you best, then this is the programme for you. With seven diploma courses to choose from, this programme offers you ultimate flexibility.

Under this programme, you will take the same foundation subjects as students who have enrolled directly in their respective diploma courses. The programme provides you with the time and opportunity to further explore your strengths and interests. With this experience, you will then be ready to pick one of the following diploma courses at the end of your first year:

- [T50] Aerospace Electronics
- [T51] Aerospace Engineering
- [T38] Biomedical Engineering
- [T43] Business Process & Systems Engineering
- [T13] Computer Engineering
- [T65] Electronics
- [T66] Mechatronics

Upon successfully completing this programme, you will graduate with the same diploma together with students who had joined a particular diploma course right from the start.

Foundation Subjects
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1 & 2
- Electronic Devices & Circuits
- Electronic Prototyping
- Engineering Mathematics 1 & 2
- Engineering Physics

Years 2 and 3 Subjects:

The core subjects that you take in your second and third year of studies will depend on which of the seven diploma courses you stream into.

TP Fundamentals (TPFun) Subjects

You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities

This programme allows you to defer your decision on which course to take, so you can have more time to observe a particular industry's performance and the economic situation, before deciding on the course to pursue.

Depending on your specialisation, you will be able to find jobs in any of the following engineering sectors: aerospace, biomedical sciences, computer and IT, clean energy, manufacturing and automation, as well as those outside the engineering sphere.

Note: Any special health requirements for a specific diploma course will also apply if you choose to branch into that course.

AEROSPACE ELECTRONICS

Scan for full details, or visit:
www.tp.edu.sg/t50

The Course

This course equips you with both the fundamental and applied knowledge for aircraft electrical, communication, navigation and flight control systems. You will undergo a rigorous aerospace training programme, which includes practical modules offered together with our partner and world-renowned aircraft maintenance training provider, Lufthansa Technical Training (LTT) of Germany.

As TP is the only polytechnic certified by the Civil Aviation Authority of Singapore (CAAS) as a SAR-147 Approved Maintenance Training Organisation (AMTO), your diploma will be more widely recognised by employers. Your Aircraft Maintenance Licence (AML) apprenticeship duration after graduating from TP will also be significantly shortened by up to 10 months.

If you aspire to be a pilot, you can also fulfil your dream by taking flying lessons as part of your Student Internship Programme in your final semester of study, to get that coveted Private Pilot Licence (PPL).

Year 1 Subjects
- Avionic Systems
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1 & 2
- Electronic Devices & Circuits
- Engineering Mathematics 1 & 2
- Engineering Physics

Year 2 Subjects
- Aerospace Maintenance Practices
- Aircraft Electrical Fundamentals
- Aircraft Electronics & Servomechanisms
- Data Visualisation & Analytics
- Engineering Mathematics 3
- Fundamentals of Aeronautical Science

Year 3 Subjects
- Aircraft Digital Systems
- Aviation Legislation & Human Factors
- Basic Aerodynamics

IoT & Automation Elective Cluster#
- Intelligent Automation
- Internet of Things Project

Aerospace Operations Elective Cluster#
- Lean Processes
- Unmanned Aircraft Operations

 # Students to choose one of these elective clusters

TP Fundamentals (TPFun) Subjects
You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities
Singapore has been Asia's most comprehensive aerospace maintenance, repair and overhaul (MRO) hub. At its peak, our aerospace industry accounted for a quarter of the region's MRO volume, when output reached about S$9 billion annually, with about 21,000 workers spread across more than 100 local and international aerospace companies.

As the world recovers from COVID-19, existing aircraft – many kept in storage during the pandemic – will need to be maintained, repaired and overhauled. New aircraft would also need to be built to meet the growing demand as the aerospace sector takes to the skies once again.

This spells exciting job opportunities for you, some of which are:
- Avionics Test Engineers
- Licensed Aircraft Engineers (LAE)
- Process / Quality Engineers
- Technical Service Engineers

Note: Applicants should not be suffering from mild or severe colour vision deficiency, uncontrolled epilepsy, profound hearing loss, severe vision impairment or any physical impairment, or be physically dependent on mobility equipment.

T51 AEROSPACE ENGINEERING

Scan for full details, or visit:
www.tp.edu.sg/t51

The Course

This course equips you with a strong foundation specialising in aerodynamics, aircraft engines, as well as structures and systems. Your learning journey will include:

- a six-month practical training stint in our Lufthansa Technical Training (LTT) Centre on campus
- opportunities for overseas study trips to Germany and the USA
- attachment opportunities to top aerospace companies for your internship

As TP is the only polytechnic certified by the Civil Aviation Authority of Singapore (CAAS) as a SAR-147 Approved Maintenance Training Organisation (AMTO), prospective employers will widely recognise your diploma. Your Aircraft Maintenance Licence (AML) apprenticeship duration after graduating from TP will also be significantly shortened by up to 10 months.

Do you aspire to be a pilot? You can fulfil this dream by taking flying lessons as part of your Student Internship Programme in your final semester of study to get that coveted Private Pilot Licence (PPL).

Year 1 Subjects
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1
- Electronic Devices & Circuits
- Engineering Drawing
- Engineering Mathematics 1 & 2
- Engineering Physics
- Statics & Strength of Materials
- Thermodynamics

Year 2 Subjects
- Aircraft Electrical Fundamentals
- Aircraft Electronics & Digital Systems
- Aviation Legislation & Human Factors
- Basic Aerodynamics
- Data Visualisation & Analytics
- Engineering Materials
- Engineering Mathematics 3
- Fluid Mechanics
- Gas Turbine Engine
- Principles of Dynamics

Year 3 Subjects
Aerospace System Design (ASD) Option#
- Aircraft Structures & Composites
- Engine Maintenance & Workshop Practices
- Major Project

Lufthansa Technical Training (LTT) Option^
- Aerospace Maintenance Practices

Students to take either # or ^

TP Fundamentals (TPFun) Subjects

You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities

Singapore has been Asia's most comprehensive aerospace maintenance, repair and overhaul (MRO) hub. At its peak, our aerospace industry accounted for a quarter of the region's MRO volume, when output reached about S$9 billion annually, with about 21,000 workers spread across more than 100 local and international aerospace companies.

As the world recovers from COVID-19, existing aircraft – many kept in storage during the pandemic – will need to be maintained, repaired and overhauled. New aircraft would also need to be built to meet the growing demand as the aerospace sector takes to the skies once again.

This spells exciting job opportunities for you, some of which are:
- Aero-mechanical Systems Specialists
- Aerospace Component Design Engineers
- Engine or Power-plant Technologists
- Licensed Aircraft Engineers (LAE)

Note: Applicants should not be suffering from mild or severe colour vision deficiency, uncontrolled epilepsy, profound hearing loss, severe vision impairment or any physical impairment, or be physically dependent on mobility equipment.

ARCHITECTURAL TECHNOLOGY & BUILDING SERVICES

Scan for full details, or visit:
www.tp.edu.sg/t29

The Course

Technology and digitalisation offer us increasing control over a building's design and, thereby, its performance, enabling us to make the built environment more adaptable to combat climate change and environmental degradation.

This is the first polytechnic diploma course based on integrated inter-disciplinary and multi-disciplinary learning in digitally designing high-performance buildings using technology such as Building Information Modelling (BIM) for virtual design, software simulations for performance evaluation and automation (smart) systems for efficient management. You will also experience how technology is used in sustainable architecture and systems design for today's digital economy.

Upon graduation, you can make your mark in dynamic, sustainable design-engineering based careers within the built environment sector. In addition, if you decide to pursue further studies, you can look forward to being eligible for a wide selection of local and overseas university programmes, as well as various post-diploma courses.

Year 1 Subjects
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Modelling for Architecture 1
- Eco-Architecture Design 1
- Electrical Design & Installation
- Engineering Mathematics 1 & 2
- Engineering Physics
- Introduction to Built Environment

Year 2 Subjects
- Air-Conditioning & Mechanical Ventilation
- Building Management Systems
- Building Performance Modelling
- Building Systems Modelling
- Digital Modelling for Architecture 2
- Eco-Architecture Design 2
- Energy Management & Audit
- Integrated Design Studio

Year 3 Subjects
- Data Visualisation & Analytics
- Fire & Life Safety Management
- Major Project

TP Fundamentals (TPFun) Subjects
You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities
In line with the Singapore Green Plan 2030, which seeks to rally bold and collective action to tackle climate change, there will be a continued national focus on sustainable development. A major target is to make 80% of all buildings in the country "green" through developing eco-friendly districts, super-low energy buildings and carbon-neutral schools. Existing buildings would need to undergo retrofitting works, and new buildings must incorporate environment-friendly designs. This promises abundant job opportunities for professionals with skill sets in building technology, building design, and sustainability.

You can look forward to rewarding and exciting job opportunities as:
- Architectural Assistants
- BIM Modellers (Architecture and M&E)
- Building Automation Technologists (Facility Management)
- Energy & Sustainability Consultants (Associate SCEM)
- Engineering Assistants (Mechanical & Electrical)
- Simulation Specialists (Building Performance)

Note: Applicants should not be suffering from uncontrolled epilepsy, profound hearing loss or severe vision impairment.

T04 AVIATION MANAGEMENT

Scan for full details, or visit:
www.tp.edu.sg/t04

The Course

This course is the first Aviation Management programme of its kind in Asia. You will learn a broad range of specialised aviation management skills and combine them with business knowledge. From learning how to manage a world-class airport, to acquiring the skill sets to operate the best airlines in the world, you'll be fully equipped to take off on an exciting career in the aviation industry!

No aviation programme is complete without experiencing flight! In this course, you may take to the skies as a cabin crew member with a Singapore-based airline as part of your internship. Or, you could choose to take the first step towards becoming a pilot via our Aeronautical Science Option, where you will undergo the required flying and theoretical lessons to obtain a Private Pilot Licence (PPL). Selected foundational subjects in this option will also give you an advantage if you pursue the Commercial Pilot Licence (CPL) or Air Transport Pilot Licence (APTL) in the future. These special arrangements, which are not offered in any similar course by other local polytechnics, will give you a head start in the aviation industry.

Year 1 Subjects

- Airline Operations
- Business Fundamentals
- Computer Programming for Problem Solving
- Engineering Mathematics 1 & 2
- Introduction to Civil Aviation
- Principles of Aeronautical Science
- Quantitative Methods

Year 2 Subjects

- Airfield Systems
- Airline Management
- Airport Operations & Management
- Airport Systems
- Aviation Safety & Security
- Business Continuity Management
- Data Visualisation & Analytics
- Project Management
- Service Quality & Management

Year 3 Subjects

- Major Project

Aeronautical Science Option#

- Air Navigation
- Flight Planning
- Meteorological Studies

Airport & Airline Option#

- Air Traffic Management
- Airport Administration
- Management of Air Cargo

#Students to choose one of these options

TP Fundamentals (TPFun) Subjects

You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities

With the resumption of air travel, and countries worldwide ramping up their economic activities post-COVID-19, things are looking up for the aviation sector!

Be part of a global business, which, at its peak, supported 63 million jobs and made up 3.5% of the global GDP. With the world's best airport and airline at your doorstep and many top airlines and aerospace firms operating in Singapore, this is the place to be for aviation training. Boosted by strong government support, our aviation sector will continue to require highly skilled professionals to operate and manage existing and upcoming aviation services and facilities. Your strong management skills will also give you an advantage in various business and hospitality-related domains.

These are some of the exciting jobs that could be yours!

- Air Traffic Controllers
- Airline Flight Controllers
- Airport Operations Centre Managers
- Airside Duty Managers
- Airside Officers
- Duty Terminal Managers
- Ground Services Officers

Note: Applicants should not be suffering from uncontrolled epilepsy, profound hearing loss or severe vision impairment.

T38 BIOMEDICAL ENGINEERING

Scan for full details, or visit:
www.tp.edu.sg/t38

The Course

Biomedical engineers are just as essential to the healthcare industry as doctors and nurses. You can make your mark in this growing sector by working with your peers to develop the next generation of smart medical devices for clinical engineering.

This interdisciplinary course provides you with integrated training in biological techniques and biomedical instrumentation, including BioMEMS (Biomedical Micro-Electro-Mechanical Systems), microfluidics, flexible hybrid electronics for healthcare wearables, smart healthcare devices using artificial intelligence, and intelligent wearable healthcare sensors.

In your final year, you can choose one of these elective clusters for further specialisation: Biomedical Design & Devices, Clinical Equipment & Process, or Healthcare Informatics. You can also join the University Pathway Programme, which allows you to take university modules during your final year and provides a one-year exemption for selected degree courses at local universities. In addition, selected students can embark on a one-year internship (compared to 4 months for most other diplomas) to gain more industry experience.

Year 1 Subjects
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1 & 2
- Electronic Devices & Circuits
- Electronic Prototyping
- Engineering Mathematics 1 & 2
- Engineering Physics

Year 2 Subjects
- Chemistry
- Data Visualisation & Analytics
- Engineering Mathematics 3
- Human Anatomy & Physiology
- Medical Devices
- Medical Device Manufacturing Practices
- Medical Electronics
- Medical Imaging & Informatics
- Microcontroller Applications

Year 3 Subjects
- Major Project

Advanced Engineering Skills Elective Cluster[#]
- Advanced Skills Practices

Biomedical Design & Devices Elective Cluster[#]
- Audiometry & Hearing Devices
- CAD & Additive Manufacturing

Clinical Equipment & Process Elective Cluster[#]
- Clinical Laboratory Equipment
- Medical Biochemistry

Healthcare Informatics Elective Cluster[#]
- Healthcare Analytics
- Patient Monitoring Technology

SUTD Pathway Programme[^]
- Computational Thinking for Design
- Modelling & Analysis
- Physical World
- Global Humanities: Literature, Philosophy & Ethics

[#] *Students to choose one of these elective clusters*
[^] *For selected students*

TP Fundamentals (TPFun) Subjects
You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities

As Singapore establishes itself as a strategic hub for medical technology (MedTech) manufacturing, as well as a global centre for medical research and advanced patient care, numerous international biomedical companies have set up base here. This, coupled with the greater health awareness and an ageing population worldwide, will give you many lucrative job opportunities in the field of manufacturing, regulatory sciences and clinical services.

Exciting careers await you as:
- Biomedical Assistant Engineers
- Biomedical Technical Officers
- Field Services Engineers
- Imaging Specialists
- Medical Devices Specialists
- Medical Product Specialists
- Medical Sales Representatives
- Medical Technologists
- Regulatory Affairs Executives

Note: Applicants should not be suffering from severe colour vision deficiency, uncontrolled epilepsy, profound hearing loss or severe vision impairment.

BUSINESS PROCESS & SYSTEMS ENGINEERING

Scan for full details, or visit:
www.tp.edu.sg/t43

The Course

As Singapore strives to be a world-class service centre and logistics hub, there will be a demand for tech-savvy professionals with multi-disciplinary knowledge and skills who can offer solutions to business issues and problems and add value to their organisations.

Here, you'll receive training in both business concepts and principles, and engineering fundamentals. You'll be able to find your niche in a wide variety of industries, including the manufacturing, logistics and service sectors in Singapore.

The course features two main areas:
(i) **Business Analytics**, which concerns the systematic investigation, prediction and prescription of business performance to provide insights for future planning, known as forward business management
(ii) **Systems Engineering**, which deals with the management, improvement and optimisation of business processes using systems thinking approach to enhance business productivity and profits

Year 1 Subjects
- Business Fundamentals
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1
- Engineering Mathematics 1
- Introduction to Processes & Systems
- Quantitative Methods

Year 2 Subjects
- Data Visualisation & Analytics
- Decision Analysis
- Engineering Economy
- Manufacturing Logistics & Simulation
- Process Management & Innovation
- Process Optimisation & Improvement
- Project Management
- Systems Concepts & Tools
- Systems Modelling & Simulation

Year 3 Subjects
- Major Project
- Customer Relationship Management
- Supply Chain Management
- Distribution Centre Management#
- IoT Security#
- Service Quality & Management#

 # Students to choose one of these electives

TP Fundamentals (TPFun) Subjects
You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities
Armed with the knowledge of fundamental business principles, business analytics, business process improvement and systems engineering, you will be able to seek lucrative career opportunities in a variety of industries such as manufacturing, logistics and services which include healthcare operations, finance, retail, customer service, as well as sales and marketing.

Your highly transferrable skill sets will allow you to secure exciting jobs in numerous industries as:
- Business Analysts
- Customer Relationship Executives
- Logistics & Supply Chain Executives
- Market Researchers
- Productivity & Management Systems Executives
- Quality Assurance & Control Specialists

With this diploma, you will also be well equipped to pursue further studies in business, finance, accountancy, the arts and social sciences, and law, as well as engineering.

Note: Applicants should not be suffering from severe colour vision deficiency or severe vision impairment.

COMPUTER ENGINEERING

Scan for full details, or visit:
www.tp.edu.sg/t13

The Course

With more and more companies embarking on digitalising their processes and businesses and placing high importance on applying the latest digital solutions, there is a growing demand for talent in the field of computer engineering. This course covers not just the traditional computer engineering areas but also emerging fields such as the Internet of Things (IoT), data analytics, artificial intelligence, cyber security and smart manufacturing. The knowledge and skills you gain in this course will empower you to become part of the vital talent pool supporting Singapore's next phase of economic transformation.

The course will prepare you to take internationally recognised industry certification examinations such as those from National Instruments, UI Path, Microsoft and Unity3D. In addition, selected students embark on a year-long internship with the Government Technology Agency of Singapore (GovTech) to gain robust industry experience.

You can also join the University Pathway Programme, which allows you to take university modules during your final year and provides a one-year exemption for selected degree courses at local universities.

Year 1 Subjects
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1 & 2
- Electronic Devices & Circuits
- Electronic Prototyping
- Engineering Mathematics 1 & 2
- Engineering Physics

Year 2 Subjects
- Artificial Intelligence & Machine Learning
- Data Visualisation & Analytics
- Engineering Mathematics 3
- Full Stack Development
- Intelligent Automation
- Internet of Things Project
- Microcontroller Applications
- Object-oriented Programming
- Advanced Skills Practices#
- IoT Security# 3(b)
- System & Network Integration# (1a)
- 3D Modelling for Virtual Reality# 2(a)

Year 3 Subjects
- Major Project
- Distribution Centre Management# 3(a)
- Interactive Programming for Virtual Reality# 2(b)
- Mobile Device Applications Development# 1(b)

Students to choose either 1(a) and 1(b), or 2(a) and 2(b), or 3(a) and 3(b), or Advanced Skills Practices

SUTD Pathway Programme*
- Computational Thinking for Design
- Modelling & Analysis
- Physical World
- Global Humanities: Literature, Philosophy & Ethics

For selected students

TP Fundamentals (TPFun) Subjects
You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities

As Singapore becomes a "smart" nation, IoT, data analytics, artificial intelligence, and virtual reality are poised to bring tremendous value and impact across industries such as transportation, aerospace, aviation, telecommunication, healthcare, retail, logistics and supply chain, smart grid, and even in various government sectors.

As this course focuses on developing your expertise and mastery of hardware and software, as well as an integration of both, you will have a competitive edge over professionals who specialise in only one of these areas. With your highly transferrable skill sets, you will have many exciting job opportunities and excellent career prospects as:
- Data Analysts
- Embedded Systems Engineers
- Hardware Engineers
- Integration Engineers
- Network / Servers / Database / Computer Systems Administrators
- Software / Web / Mobile Application Developers or Programmers
- Systems Analysts

Note: Applicants should not be suffering from severe colour vision deficiency, uncontrolled epilepsy, profound hearing loss or severe vision impairment.

T65 ELECTRONICS

Scan for full details, or visit:
www.tp.edu.sg/t65

The Course

Smart electronics devices, flexible hybrid electronics, 5G mobile networks, advanced manufacturing, artificial intelligence, the Internet of Things (IoT) and autonomous vehicles are some of the cutting-edge technologies that have become more pervasive in today's hyper-connected world, spearheading our digital transformation.

This course prepares you for the current and emerging needs of the new digital economy. It will equip you with future-ready skill-sets in these emerging technologies, as well as their applications in various high-potential fields such as healthcare, assistive technology, and green innovations for the environment.

In your final year, you can choose one of these elective clusters for further specialisation: Aerospace Electronics (Avionics), Advanced Engineering Skills, Industrial Artificial Intelligence, Intralogistics & Cybersecurity, Robotics, or Semiconductor Technology. You can also join the University Pathway Programme, which allows you to take university modules during your final year and provides a one-year exemption for selected degree courses at local universities. Selected students can also do a one-year internship (compared to 4 months for most other diplomas) to gain more industry experience.

Year 1 Subjects
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1 & 2
- Electronic Devices & Circuits
- Electronic Prototyping
- Engineering Mathematics 1 & 2
- Engineering Physics

Year 2 Subjects
- Advanced Electronics & Communication
- Circuit & Control Systems
- Data Visualisation & Analytics
- Digital Sensors & Integrated Circuit Applications
- Engineering Mathematics 3
- Integrated Project
- Microcontroller Applications
- Power Electronics & Drives
- Printed Circuit Board Design

Year 3 Subjects
- Major Project

Advanced Engineering Skills Elective Cluster#
- Advanced Skills Practices

Avionics Elective Cluster#
- Aircraft Digital Systems
- Avionic Systems

Industrial Artificial Intelligence Elective Cluster#
- Edge Computing & Machine Learning
- Industrial IoT Analytics

Intralogistics & Cybersecurity Elective Cluster#
- Distribution Centre Management
- IoT Security

Robotics Elective Cluster#
- Robotics & Automation
- Smart Manufacturing System

Semiconductor Technology Elective Cluster#
- Cleanroom Equipment & Technology
- IC Process Integration

SUTD Pathway Programme^
- Computational Thinking for Design
- Modelling & Analysis
- Physical World
- Global Humanities: Literature, Philosophy & Ethics

Students to choose one of these elective clusters
^ For selected students

TP Fundamentals (TPFun) Subjects
You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities
Many of the world's leading electronics and semiconductor manufacturers are housed in Singapore, providing technological solutions to global industries while continually generating new products, applications, and markets.

With this diploma, you will have excellent and diverse career prospects in the many sectors that use consumer and industrial electronics.

Potential jobs for you include:
- Electronics / Automation Engineers
- Field Service / Application Engineers
- IoT/System Integration Engineers
- Maintenance / Equipment Engineers
- Production / Manufacturing / Process Engineers
- Software / Firmware / Embedded Engineers
- Test / QA / QC Engineers

Note: Applicants should not be suffering from severe colour vision deficiency, uncontrolled epilepsy, profound hearing loss or severe vision impairment.

INTEGRATED FACILITY MANAGEMENT

Scan for full details, or visit:
www.tp.edu.sg/t28

The Course

This multidisciplinary diploma will equip you with the knowledge and skill sets in managing the amenities, aesthetics and functionality of establishments such as Jewel Changi Airport, Marina Bay Sands and Gardens by the Bay. Identified as the largest growth area in the built environment, the Facilities Management (FM) industry is undergoing massive technological transformation, opening up rich and exciting career and further studies opportunities for you!

You will be exposed to multi-disciplinary subjects related to building sciences, business management and design. This course also provides cluster electives in three industries: Aviation Facilities, Hospitality Facilities and Smart Facilities.

As the first diploma course to be conferred the Best FM Training Institution (Innovation Excellence) Award by the International Facility Management Association (IFMA), and also the first diploma in the world to be recognised by International Facility Management Association as an Accredited Degree Programme, this course will provide you with a competitive edge on the global stage!

Year 1 Subjects
- Air-conditioning & Mechanical Ventilation
- Building Information Modelling Collaboration
- Electrical Design & Installation
- Engineering Mathematics 1 & 2
- Facilities Operations & Maintenance
- Security & Surveillance
- Virtual Design & Facility Planning
- Workplace Safety & Health for Facility Management

Year 2 Subjects
- Computer Programming for Problem Solving
- Contract Management
- Data Visualisation & Analytics
- Energy Management & Audit
- Fire & Life Safety Management
- Project Management
- Sustainable Facility Management

Aviation Facilities Elective Cluster
- Airport Administration#
- Airport Operations & Management#
- Airport Systems#

Hospitality Facilities Elective Cluster
- Club & Resort Business#
- Event Management#
- Introduction to Hospitality & Tourism#

Smart Facilities Elective Cluster
- Building Management System#
- Smart FM & Asset Enhancement#
- Intelligent Automation#

 # Students to choose three of these cluster elective subjects

Year 3 Subjects
- Major Project
- Building Performance Modelling
- Service Quality & Management

TP Fundamentals (TPFun) Subjects
You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities
Armed with multidisciplinary skills, you will find employment in the facilities management or development teams in the airport, hospitality and tourism, events and convention, leisure and entertainment, integrated resort, as well as business and finance sectors, as:
- BIM Assistant Specialists (Digital Delivery)
- Contract/Procurement Executives
- Event Managers
- Facilities Executives
- Fire Safety Managers
- Sustainability Managers

You will also be able to pursue numerous certifications recognised by the industry, such as:
- Associate Certified Project Engineer (Assoc. CPE) certification from the Institution of Engineers Singapore (IES)
- bizSAFE 2 & 4 certification from the Workplace Safety and Health Council (WSHC)
- Certified Associate in Project Management (CAPM) certification from the Project Management Institute (PMI)
- Digital Delivery Management Certification – Tier 4 (Provisional) from Building Smart Singapore
- Facility Management Professional (FMP) certification from the International Facility Management Association (IFMA)
- Fire Safety Manager (FSM) certification from the Singapore Civil Defence Force (SCDF)
- ICDL Asia Certification

Note: Applicants should not be suffering from severe vision impairment.

T66 MECHATRONICS

Scan for full details, or visit:
www.tp.edu.sg/t66

The Course

Industry 4.0 is transforming the modern workplace. From basic engineering to cutting-edge technologies, this course prepares you for the new era of advanced manufacturing where humans, machines and systems communicate and collaborate safely in real-time. You will learn to master the application of robotics, automation, 3D printing and data analytics in technological areas such as cyber-physical systems, virtual manufacturing, as well as machine vision and pattern recognition.

In your final year, you can choose one of these exciting elective clusters for further specialisation: 3D Printing, Advanced Engineering Skills, Advanced Manufacturing, Intralogistics & Cybersecurity, or Semiconductor Technology. You can also join the University Pathway Programme, which allows you to take university modules during your final year and provides a one-year exemption for selected degree courses at local universities. In addition, selected students can embark on a one-year internship (compared to 4 months for most other diplomas) to gain more industry experience.

Year 1 Subjects
- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1 & 2
- Electronic Devices & Circuits
- Electronic Prototyping
- Engineering Mathematics 1 & 2
- Engineering Physics

Year 2 Subjects
- Data Visualisation & Analytics
- Engineering Drawing
- Engineering Mathematics 3
- Integrated Project
- Introduction to Smart Automation
- Machining Technology
- Principles of Dynamics
- Robotics & Automation
- Statics & Strength of Materials

Year 3 Subjects
- Major Project

3D Printing Elective Cluster#
- Advanced CAD & Simulation
- CAD & Additive Manufacturing

Advanced Engineering Skills Elective Cluster#
- Advanced Skills Practices

Advanced Manufacturing Elective Cluster#
- Machine Vision & Pattern Recognition
- Smart Manufacturing System

Intralogistics & Cybersecurity Elective Cluster#
- Distribution Centre Management
- IoT Security

Semiconductor Technology Elective Cluster#
- Cleanroom Equipment & Technology
- IC Process Integration

SUTD Pathway Programme^
- Computational Thinking for Design
- Modelling & Analysis
- Physical World
- Global Humanities: Literature, Philosophy & Ethics

Students to choose one of these elective clusters
^ For selected students

TP Fundamentals (TPFun) Subjects
You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

- Student Internship Programme
- Effective Communication
- Professional Communication
- Current Issues & Critical Thinking
- Career Readiness
- Career Management
- Global Studies
- Guided Learning
- Innovation & Entrepreneurship
- Leadership Fundamentals
- Leadership in Action
- Sports & Wellness
- Sustainability & Climate Action

Career Opportunities

With increasing consumer demand for customised products and smart digital services in growth areas such as advanced manufacturing, aerospace, robotics, artificial intelligence, precision engineering and pharmaceutical manufacturing, you will have excellent job prospects!

This course will enable you to master the new technologies and right skill sets to become future-ready in advanced manufacturing. You can excel in diverse sectors, from precision engineering and integrated circuit manufacturing to semiconductor fabrication and pharmaceutical processing.

Potential jobs include:
- Aerospace Technologists
- Associate Engineers / Application Engineers
- Automation Technologists
- Equipment / Maintenance / Service / Test Engineers
- Manufacturing / Mechanical / Product Engineers
- Process Control Engineers
- Research & Development Specialists
- Robot Coordinators
- Technical Sales Engineers

Note: Applicants should not be suffering from severe colour vision deficiency, uncontrolled epilepsy, profound hearing loss or severe vision impairment.

SUMMARY OF ENGINEERING COURSES & SPECIALISATIONS

DIPLOMA	SPECIALISATION
[T50] AEROSPACE ELECTRONICS	• Avionics Systems • CAAS-approved SAR-147 Licensed Aircraft Engineer Training • Flight Training
[T51] AEROSPACE ENGINEERING	• Airframe, Engines & Composites • CAAS-approved SAR-147 Licensed Aircraft Engineer Training • Flight Training
[T29] ARCHITECTURAL TECHNOLOGY & BUILDING SERVICES	• Architectural Technology • Building Information Modelling & Management • Environmental Sustainable Design
[T04] AVIATION MANAGEMENT	• Airline Business • Airport Management • Air Traffic Management • Flight Training & Operations
[T38] BIOMEDICAL ENGINEERING	• Bioinstrumentation • Clinical Practices • Hearing Science • Healthcare Analytics
[T43] BUSINESS PROCESS & SYSTEMS ENGINEERING	• Business Processes & Analytics • Systems Engineering & Simulation
[T13] COMPUTER ENGINEERING	• Artificial Intelligence • Intelligent Automation • Internet of Things (IoT) • Virtual Reality (VR)
[T65] ELECTRONICS	• Advanced Engineering Skills • Aerospace Electronics • Industrial Artificial Intelligence • Intralogistics & Cybersecurity • Robotics • Semiconductor Technology
[T28] INTEGRATED FACILITY MANAGEMENT	• Project Management • Smart Facilities Management Technologies • Sustainable Facilities Management • Workplace Safety & Health Management
[T66] MECHATRONICS	• 3D Printing • Advanced Engineering Skills • Advanced Manufacturing • Intralogistics & Cybersecurity • Semiconductor Technology