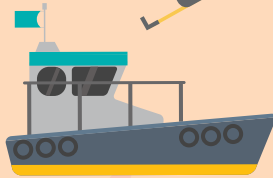


ENGINEERING



RIGHT CHOICE. RIGHT HERE.

ITE College Central
A College of Creativity & Innovation

ITE College Central's **School of Engineering** is known for its innovative and technologically up-to-date training programmes that equip you with the relevant knowledge and skills. Our graduates are highly skilled and competent to take on a career in engineering services and manufacturing related industries.

Besides on-campus training, you will be attending industrial attachment programmes locally or abroad, for you to experience real work settings. Aerospace Technology, Aerospace Avionics, Marine Engineering, Mechanical Engineering, Engineering Design and Mechatronics are among the niche courses in the School.

Is Innovation your cup of tea? Explore the courses at the **School of Engineering!**



Nitec in AEROSPACE AVIONICS

Set foot on the pilot's flight deck and be fascinated by state-of-the-art instrumentation of flight management and control, navigation and communication systems.

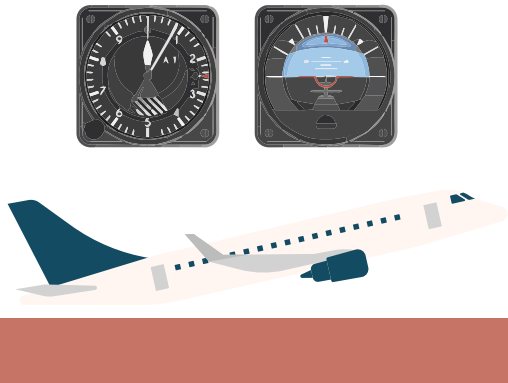
In *Nitec* in Aerospace Avionics, you will learn to maintain and repair the communication, navigation, electronic flight instruments and electrical systems on-board various aircraft types housed in our very own aircraft hangar.

You Will Learn

- Aircraft General Maintenance
- Human Factors and Air Legislation
- Aircraft Electrical and Electronics Systems
- Aircraft Instrumentation System
- Aircraft Materials and Structures
- Aircraft Communication and Navigation Systems
- Aircraft Maintenance Practice

Career Prospects

- Aircraft Technician (Avionics trade)
- Avionics Technician
- Aircraft Maintenance Technician



Nitec in AEROSPACE MACHINING TECHNOLOGY

Do you know that an aeroplane is made up of many precise components of different materials and shapes?

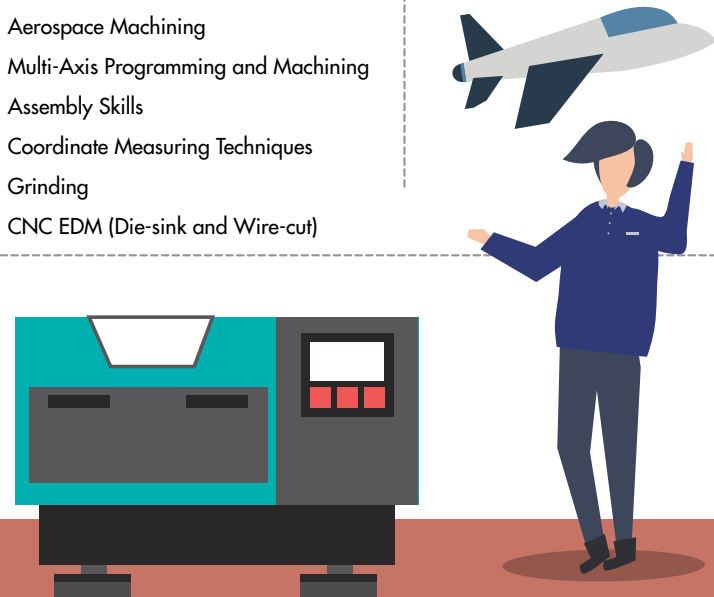
Aerospace is a rapidly developing field with many new discoveries each year. Join *Nitec* in Aerospace Machining Technology and you will learn to manufacture aerospace components, using state-of-the-art machines and software to monitor precision machine operations, as well as perform quality checks.

You Will Learn

- Engineering Drawing and Inspection Techniques
- Engineering Process (Turning)
- Engineering Process (Milling)
- 3D CAD/CAM Applications
- Aerospace Machining
- Multi-Axis Programming and Machining
- Assembly Skills
- Coordinate Measuring Techniques
- Grinding
- CNC EDM (Die-sink and Wire-cut)

Career Prospects

- Manufacturing Specialist
- Aerospace Machining Specialist
- Precision Specialist



Nitec in AEROSPACE TECHNOLOGY

Millions of people across the world fly every day. They put their lives in the hands of the skilled technicians who keep the aircraft airworthy.

Join *Nitec* in Aerospace Technology and learn how to maintain and repair aircraft airframes and engine systems in the growing aerospace industry. This course will equip you with the technical knowledge and skills to work in the aerospace industry.

This is a Singapore Airworthiness Requirements Part-147 (SAR-147) course currently approved by Civil Aviation Authority Singapore (CAAS).

You Will Learn

- Aircraft General Maintenance
- Aircraft Electrical System Maintenance
- Airframe Maintenance
- Human Factors and Air Legislation
- Aircraft System Maintenance
- Aircraft Propulsion Maintenance
- TIG Welding
- Non-Destructive Testing
- Basic Principle of Helicopter
- Composite Structure Repairs
- Applied Aviation Science and Mathematics

Career Prospects

- Aircraft Maintenance Technician
- Aircraft Engine Technician
- Aircraft Structural Repair Technician
- Aircraft Sheet Metal Technician
- Aircraft Technician (Airframe and Engine)



Nitec in DIGITAL & PRECISION ENGINEERING

Learn how digital technologies are incorporated into the manufacturing landscape, from digital twins to real time monitoring and wireless technologies.

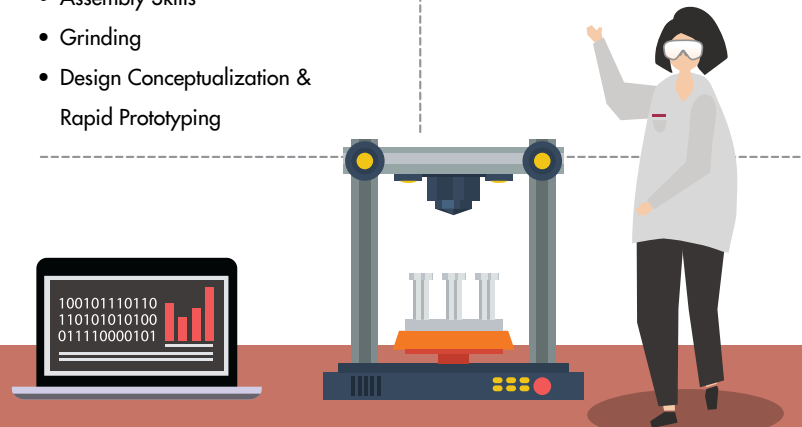
Nitec in Digital & Precision Engineering teaches you how a smart factory uses digital systems to create products and improve manufacturing processes via IoT (Internet of Things). As a key pillar of engineering, you will also learn how to set-up and control state-of-the-art machines to produce components for the Aerospace, Oil and Gas, Semiconductor, Medical industries and many more.

You Will Learn

- Engineering Drawing and Inspection Techniques
- Engineering Process (Turning)
- Engineering Process (Milling)
- 3D CAD/CAM Applications
- Digital Manufacturing Processes
- Machine Monitoring Systems
- Assembly Skills
- Grinding
- Design Conceptualization & Rapid Prototyping

Career Prospects

- Engineering Technologist
- Precision Machinist
Machining Specialist
- Quality Control Technician
Technologist



Nitec in MECHANICAL TECHNOLOGY

You have been interested in mechanical devices. You have the desire to do something hands-on. You take things apart and do modification to satisfy your curiosity.

Nitec in Mechanical Technology provides students with the skills and knowledge to perform mechanical services and maintain machinery, plant equipment and basic automation control systems.

You Will Learn

Career Prospects

- CAD & 3D Printing
- IoT & Electrical Applications
- Industrial Piping and Valve System
- Machinery Maintenance
- Electro Pneumatics and Hydraulics
- Plant Equipment Maintenance
- Metrology
- Turning
- Mechanical Fabrication
- Engineering Design
- Bearing Technology

- Maintenance Technician
- Mechanical Engineering Technician



Nitec in MECHATRONICS & ROBOTICS

Are you amazed with what autonomous machines such as automated guided vehicles, driverless cars and robots can do and how they work?

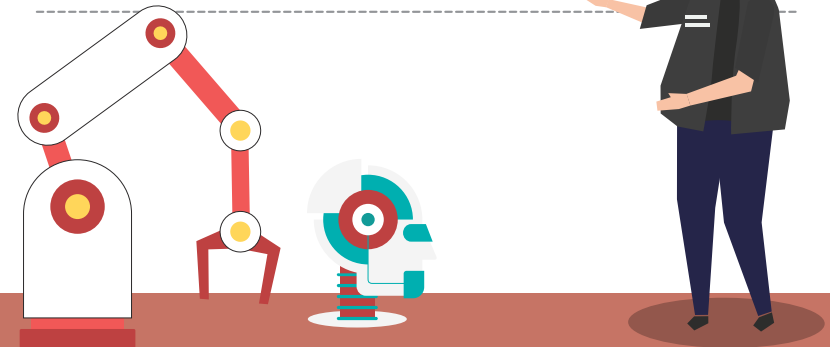
Nitec in Mechatronics & Robotics is a 3-in-1 course consisting of mechanical, electrical/ electronics and microcomputer controlled system that will equip you with essential knowledge and skills of the multidisciplinary fields. These will enable you to install, set up, operate, maintain and service industrial automated production equipment and systems. You will also learn to perform computer-aided drafting and design, construct and assemble mechanical support, and rectify basic electronics and electrical faults.

You Will Learn

Career Prospects

- Pneumatics
- Robotics
- Electrical & Electronics Practices
- CAD & Mechanical Systems
- Drives & Motor Control
- PLC & Automation
- Application Mathematics
- Animatronics
- Microcontroller Applications
- Production Control System and Applications

- Automation Technician
- Automated Equipment Maintenance Technician
- Mechatronics Technician



Higher Nitec in CIVIL & STRUCTURAL ENGINEERING DESIGN

Are you fascinated by how the Supertrees, the Singapore Flyer or Marina Bay Sands Hotel were built?

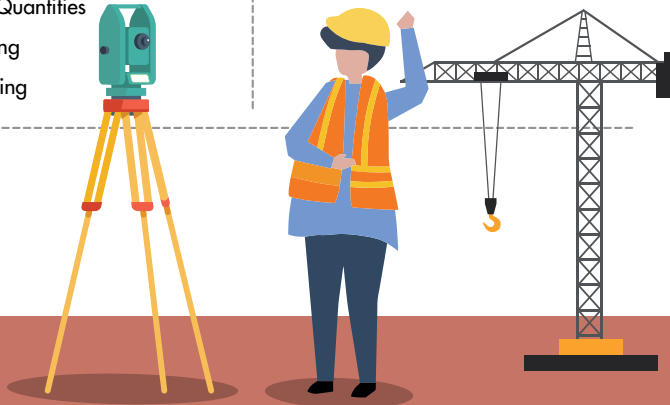
In *Higher Nitec* in Civil & Structural Engineering Design, you will learn to use Building Information Modelling (BIM) to design and create 3D models for buildings, steel structures and civil engineering works. You will also assist the architect in ensuring that the structural and civil engineering drawings are produced according to specifications and the relevant Codes of Practices.

You Will Learn

- Engineering Graphics
- Engineering Mathematics and Statics
- Building Information Modelling
- Building Structure and External Works
- Reinforced Concrete Detailing and Design
- Steel Structure Detailing and Design
- Elementary Quantities
- Model Making
- Land Surveying

Career Prospects

- Civil & Structural Draughtsman
- Technical Executive
- Technical Officer
- CAD Designer



Higher Nitec in ENGINEERING WITH BUSINESS

Ready to be part of the Engineering and Business workforce? This multi-disciplinary course covers skills and competencies for Engineering, Manufacturing Processes and Business.

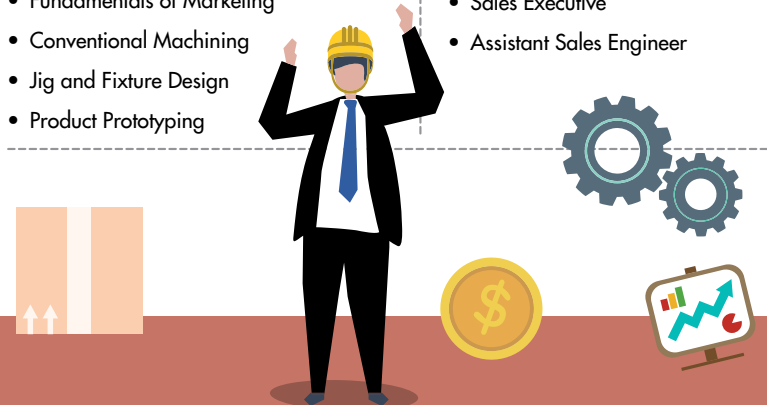
Higher Nitec in Engineering with Business will provide you with the essential skills and knowledge to carry out technical support functions in engineering design and operations, machine operations and maintenance, quality assurance, process improvements and productivity innovation. It also covers business fundamentals such as technical marketing, purchasing, logistic administration, sales and services.

You Will Learn

- Mathematics and Engineering Systems
- CAD and Engineering Design
- Quality Engineering
- Engineering Materials and Mechanics
- Elements of Business Practice
- Manufacturing Processes and Prototyping
- Manufacturing Engineering
- Fundamentals of Marketing
- Conventional Machining
- Jig and Fixture Design
- Product Prototyping

Career Prospects

- Engineering Assistant
- Manufacturing Engineering Technician
- Quality Assurance Technician
- Production Supervisor
- Quality Control Technician
- Quality Process Technician
- Sales Executive
- Assistant Sales Engineer



Higher Nitec in INTEGRATED MECHANICAL & ELECTRICAL DESIGN

Are you interested in making a building more energy efficient? Unleash your potential and creativity in designing of sustainable and environmentally friendly buildings.

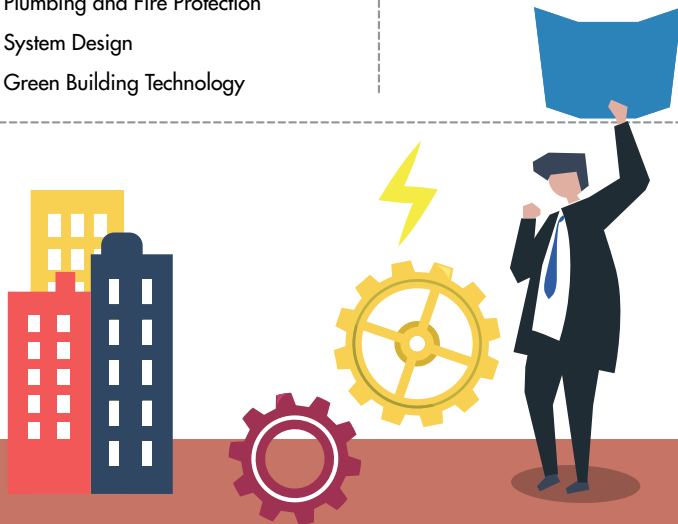
In *Higher Nitec* in Integrated Mechanical & Electrical Design, you will learn to prepare working drawings to assist in the design of key building systems, like air-conditioning and mechanical ventilation systems, electrical installations and control systems, fire detection and protection systems and water supply systems.

You Will Learn

- Engineering Graphics
- Engineering Mathematics and Statics
- Building Information Modelling
- Electrical System Design
- Air-Conditioning and entilation System Design
- Plumbing and Fire Protection System Design
- Green Building Technology

Career Prospects

- Mechanical & Electrical CADD Specialist
- Mechanical & Electrical Assistant Designer
- Mechanical & Electrical Draughtsman



Higher Nitec in MARINE & OFFSHORE TECHNOLOGY

Are you interested to be part of the Marine industry, and ensure the smooth sailing of ships, vessels and offshore structures?

In *Higher Nitec* in Marine & Offshore Technology, you will learn how to provide technical support and supervise fabrication, repair and refurbishment activities of all types of vessels and offshore structures in the marine and offshore industry.

You Will Learn

- Quality Engineering
- Ship Systems
- Welding Technology
- Fabrication Technology
- Pipe Design and Systems
- Offshore Technology
- Basic Naval Architecture
- Ship and Offshore Survey
- Marine Project Planning and Management

Career Prospects

- Assistant Supervisor
- Trainee Supervisor
- Assistant Marine Supervisor
- Foreman



Higher Nitec in MARINE ENGINEERING

You are fascinated by how huge metal ships glide gracefully through the water. You want to ensure that these vessels operate smoothly and contribute to the robust maritime industry.

If these statements describe you, *Higher Nitec* in Marine Engineering is for you. Learn how to inspect ship systems and machinery components, design and fabricate jigs and fixtures, align marine machinery, repair and maintain marine control circuits and shipboard equipment.

You Will Learn

- Quality Engineering
- Ship Systems
- Marine Propulsion System
- Marine Workshop Technology
- Marine Auxiliary Systems
- Marine Control Systems and Instrumentation
- Engineering Watchkeeping
- Shipboard Legislation and Resource Management

Career Prospects

- Assistant Marine Supervisor (Mechanical)
- Foreman (Mechanical)
- Marine Engineering Officer (Special Limits)

Higher Nitec in MECHANICAL ENGINEERING

Do you wish to be part of the team that helps to improve the operational efficiency of machines and processes in a production or an engineering environment?

Higher Nitec in Mechanical Engineering will equip you with the skills and technical knowledge to carry out technical support functions in mechanical engineering design, production, quality assurance, materials control and maintenance of automated machines and equipment.

You Will Learn

- Mathematics and Engineering Systems
- CAD and Engineering Design
- Quality Engineering
- Engineering Materials and Mechanics
- Engineering Development and Applications
- System Integration and Controls
- Conventional Machining
- Jig and Fixture Design
- Product Prototyping

Career Prospects

- Engineering Assistant
- Mechanical Engineering Technician
- Maintenance Supervisor
- Quality Assurance Technician
- Quality Process Technician



Higher Nitec in MECHATRONICS ENGINEERING

Have you ever wanted to work in the Automation Industry?

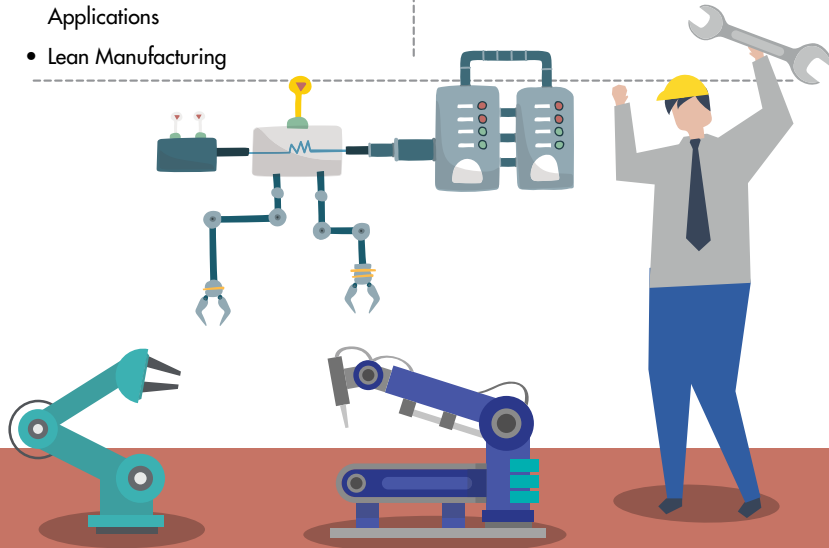
Join *Higher Nitec* in Mechatronics Engineering and learn broad-based skills and knowledge in electrical, electronic and mechanical disciplines to enable you to perform work involving assembling, installing, and setting up industrial automated equipment and systems.

You Will Learn

- CAD & Mechanical Applications
- Electrical & Electronics Applications
- Pneumatics & Automation
- PLC & Motor Control
- Cyber Physical Systems
- Robotics Systems
- Hydraulics
- Single Board Micro-controller Applications
- Lean Manufacturing

Career Prospects

- Automation Technician
- Engineering Assistant
- Industrial Engineering Technician
- Mechatronics Technician
- Plant Maintenance Technician
- Production Supervisor



Higher Nitec in OFFSHORE & MARINE ENGINEERING DESIGN

Are you interested to be part of a team that designs ships that can carry out its tasks efficiently and economically?

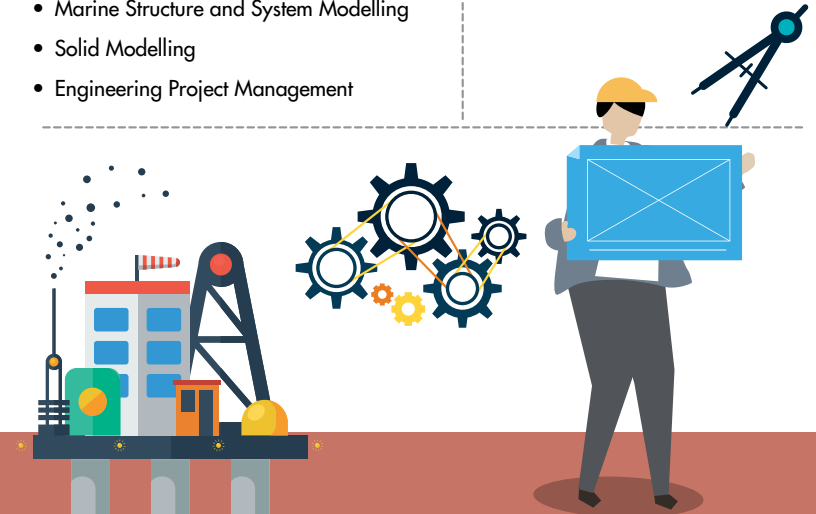
Play an important role in the marine and offshore industry through *Higher Nitec* in Offshore & Marine Engineering Design, as you will learn to design and prepare working drawings for offshore and marine structures, accommodation facilities, marine piping and marine electrical and control systems.

You Will Learn

- Engineering Graphics
- Offshore and Marine Structure Design
- Offshore and Marine Electrical System Design
- Offshore and Marine Piping System Design
- Offshore and Marine HVAC System Design
- Marine Structure and System Modelling
- Solid Modelling
- Engineering Project Management

Career Prospects

- Offshore & Marine Engineering CAD Specialist
- Assistant Technical Engineer
- Technical Associate



Higher Nitec in ROBOTICS & SMART SYSTEMS

Do you want to be trained and be ready for the Robotics industry?

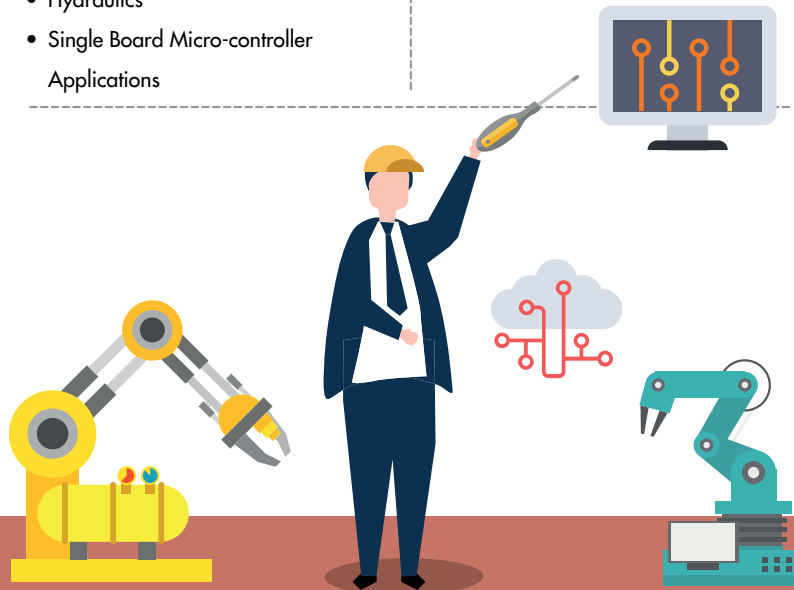
Higher Nitec in Robotics & Smart Systems will provide you with the knowledge, skills and hands-on training in robotics programming, smart systems design, setup and testing. At the end of the course, you will be able to set up, install, program and calibrate robotics and smart systems used in the industrial and service sectors.

You Will Learn

- Robotics & Applications
- Electrical Applications
- Mobile Robotics & Control
- Smart Sensors & Integration
- End Effectors
- Smart Systems & Programming
- Hydraulics
- Single Board Micro-controller Applications

Career Prospects

- Robotics Technician
- Robotics Coordinator
- Robotics Specialist
- Technician (Robotics)
- Engineering Assistant (Robotics)



Higher Nitec in PRECISION ENGINEERING

Have you ever wondered how precision engineering works in real life?

In *Higher Nitec* in Precision Engineering, you will learn to create, interpret CNC part program and using machining to produce the precise parts. You will be equipped with the skills and technical knowledge to prepare working drawings and assist in the design of process plants with application softwares.

You Will Learn

- Advanced Materials and Metrology
- Advanced Machining and Tool Management
- Product Prototyping

Career Prospects

- Aerospace and Oil & Gas Machinist
- Quality Assurance Technician
- Machine-Tool Setter-Operator



TECHNICAL ENGINEER DIPLOMA IN MACHINE TECHNOLOGY

Want to be a highly-skilled technologist in the precision engineering industry?

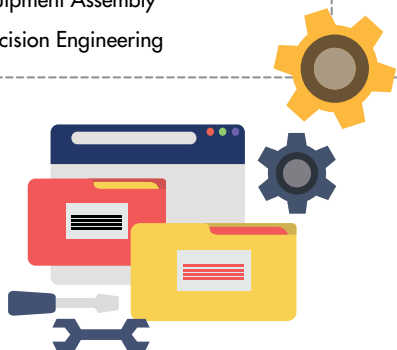
The Technical Engineer Diploma in Machine Technology will provide you with the skills and knowledge in the area of machine / equipment design and building, including making, assembling, testing and commissioning.

Offered in partnership with the Ministry of Education, Youth and Sports (MEYS), Baden-Württemberg, Germany, the Technical Engineer Diploma in Machine Technology follows a practice-based curriculum prescribed by our prestigious partner institution, Gottlieb-Daimler-Schule 1 (GDS 1) in Baden-Württemberg, Germany.

Career Prospects

Graduates can look forward to an exciting career in the following industries:

- Industrial Automation Equipment Manufacturing
- Machine Tool Manufacturing
- Machinery and Systems
- Equipment Assembly
- Precision Engineering



Minimum Entry Requirements

NITEC

Course	Requirement
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Aerospace Avionics ■■

Aerospace Technology ■■

3 GCE 'N' level passes or

- Grade A to D (1 - 5): Mathematics and two other subjects

2 GCE 'O' level grades

- Grade 1 - 8 (any two subjects)

Aerospace Machining Technology

Digital & Precision Engineering

Mechatronics & Robotics ■

3 GCE 'N' level passes or

- Grade A to D (1 - 5): Mathematics or Science³ and two other subjects

2 GCE 'O' level grades

- Grade 1 - 8 (any two subjects)

Mechanical Technology

Completed GCE 'N' or GCE 'O' Level

The following two courses are for progression only

Higher Nitec in Precision Engineering

Nitec graduates of the following courses with minimum GPA of 2.8 (inclusive of CCA bonus points):

- Aerospace Machining Technology
- Laser & Tooling Technology
- Machine Technology
- Medical Manufacturing Technology
- Precision Engineering (Aerospace/ Injection Mould/Machining/ Press Tool/Tool & Mould)

Technical Engineer Diploma in Machine Technology ■

To apply for the Technical Engineer Diploma in Machine Technology course, you need to be a Singapore Citizen with relevant ITE qualifications listed in **Annex A**.

Minimum Entry Requirements

HIGHER NITEC

Course	Requirement
<ul style="list-style-type: none"> Civil & Structural Engineering Design Mechanical Engineering Mechatronics Engineering ■ 	<p>3 GCE 'O' level grades¹ or</p> <ul style="list-style-type: none"> Grade 1 - 8 in English Language Grade 1 - 7 in Mathematics (Elementary/Additional) Grade 1 - 8 in one approved subject¹ <p>5 GCE 'N(A)' Level passes</p> <ul style="list-style-type: none"> Grade 1 - 4 in English Language Grade 1 - 4 in Mathematics Grade 1 - 5 in three other subjects <p><i>A total of 19 points or less for English, Mathematics and three other subjects (ELMAB3)² in the GCE N(A) Level examinations.</i></p>

<ul style="list-style-type: none"> Engineering with Business Integrated Mechanical & Electrical Design Marine & Offshore Technology Marine Engineering Offshore & Marine Engineering Design Robotics & Smart Systems ■ 	<p>3 GCE 'O' level grades¹ or</p> <ul style="list-style-type: none"> Grade 1 - 8 in English Language Grade 1 - 7 in Mathematics (Elementary/Additional) Grade 1 - 8 in one approved subject¹
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Footnotes

¹ Biology / Biotechnology / Chemistry / Combined Science / Computer Studies / Design & Technology / Engineering Science / Fundamentals of Electronics / Human & Social Biology / Integrated Science / Physical Science / Physics / Science (Chemistry, Biology) / Science (Physics, Biology) / Science (Physics, Chemistry) / Science (Physics, Biology, Chemistry)

² GCE 'N(A)' school leavers who applied during the January intake under the Direct Entry Scheme will undergo ten weeks of preparatory programme followed by two years of *Higher Nitec* training.

³ Mobile Robotics and Smart Electrical Technology subjects can be used in lieu of Science for admission to these *Nitec* courses.

■ Applicants applying for this course must ensure that they are free from colour appreciation deficiency

■ Applicants are required to go for interviews and /or admission (drawing) tests

Annex A

Higher Nitec	Grade Point Average (GPA)
<ul style="list-style-type: none"> Advanced Manufacturing Engineering with Business Mechanical Engineering Mechatronics Engineering Precision Engineering Robotics & Smart Systems 	GPA 2.0 and above

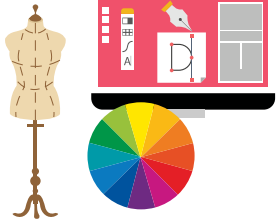
Nitec	Grade Point Average (GPA)
<ul style="list-style-type: none"> Aerospace Machining Technology Digital & Precision Engineering Laser & Tooling Technology Machine Technology Mechanical Technology Mechatronics Mechatronics (Automation Technology) Mechatronics (Equipment Assembly) Mechatronics (Medical Technology) Mechatronics & Robotics Medical Manufacturing Technology Precision Engineering (Aerospace) Precision Engineering (Injection Mould) Precision Engineering (Precision Machining) Precision Engineering (Press Tool) Precision Engineering (Tool & Mould) 	GPA 3.0 and above

WHAT ABOUT ME?

1. Scan the QR code and complete the RIASEC profiling
2. Discover the Schools and industry clusters you may be inclined to based on your RIASEC codes.



Notes



School of DESIGN & MEDIA

R - Realistic, A - Artistic, E - Enterprising

Creative Arts & Fashion Industry

Express your individuality in the various aspects of the creative industry. Knowing how to synthesise technology and ideology is as important as having good aesthetic sense in this industry.

School of

BUSINESS & SERVICES

A - Artistic, S - Social, E - Enterprising

Social & Personal Services

Love to connect with others and make an impact in their lives? This industry offers you many opportunities to do just that and add that personal touch and flair to your work.



School of

ELECTRONICS & INFO-COMM TECHNOLOGY

R - Realistic, I - Investigative, C - Conventional

Info-comm Technology

Knowledge of computers and coding will give you the fundamentals. It's really all about understanding people's problems and using technology to make everyday lives easier and better.



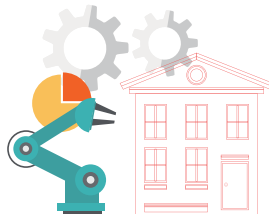
School of

ENGINEERING

R - Realistic, I - Investigative, C - Conventional

Engineering

For practical and logical individuals who love problem-solving. Those who like working with people can also gain satisfaction in finding solutions to real-world problems.





Institute of Technical Education



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