NGEE ANN POLY

SCHOOL OF ENGINEERING

- Common Engineering Programme
- Engineering Science Revamped
- Aerospace Engineering Revamped
- Biomedical Engineering Revamped
- Electrical Engineering Revamped
- Electronic & Computer Engineering Revamped
- Mechanical Engineering Revamped
- Mechatronics & Robotics Revamped
- Offshore & Sustainable Engineering Revamped

AY 2026










Engineering with that Something Xtra!

From exciting industry projects, cutting-edge robotics research, to the latest Generative AI technologies, you'll find engineering with that something xtra at Ngee Ann Polytechnic's School of Engineering (SoE). Engineer your unique learning journey with our flexible pathways, which include a year-long industry immersion, university pathway programmes, and a Second Major in Business. Explore our top-notch courses – like the Common Engineering Programme and Diploma in Engineering Science – and turn your ideas into impactful change!

8 Diplomas + 1 Common Engineering Programme

Common Engineering Programme (N71)
- Gain exposure to various engineering fields before making an informed choice
- Towards the end of your first semester, choose from one of our 8 engineering diplomas

Engineering Science (N93) Revamped
- Designed for university-bound students with a strong passion for applied science and engineering
- Develop skills in emerging technologies, including artificial intelligence and machine learning
- Choose to specialise in AI for Autonomous Systems, Data Analytics & Security, Operational Technology Cybersecurity or Space Technology

Aerospace Engineering (N65) Revamped
- Drive the future of aviation with this course, gaining cutting-edge skills in data analytics, artificial intelligence, and machine learning
- With Singapore's thriving aerospace industry, be poised for rewarding careers!
- Focus on either Avionics or Mechanical; choose to specialise in one of three Cross-Disciplinary Specialisations

Biomedical Engineering (N60) Revamped
- Be at the forefront of healthcare innovation with a diploma that bridges engineering and life sciences
- Learn to design and test medical devices and master key skills in the rapidly expanding MedTech sector
- Choose to specialise in one of three Cross-Disciplinary Specialisations

Electrical Engineering (N43) Revamped
- Power the future with Singapore's only electrical engineering diploma focused on sustainability and the green economy
- Customise your learning through five pathways: electives, a capstone project, a one-year industry immersion, and specialisations in Smart Energy System, Sustainable Power Engineering, or one of three Cross-Disciplinary Specialisations
- Pursue a Second Major in Business for expanded career pathways and opportunities!

Electronic & Computer Engineering (N44) Revamped
- Shape the future of intelligent systems with a strong foundation in electronic circuit design, software programming, computer networks, and other cutting-edge technologies
- Choose to specialise in Artificial Intelligence of Things (AIoT), Microelectronics, Operational Technology Cybersecurity or Space Technology; or deepen your real-world experience through a one-year industry immersion
- Top up your diploma with a Second Major in Business to broaden your study and career opportunities!

Mechanical Engineering (N41) Revamped
- Broad-based curriculum focused on sustainability, preparing you for diverse careers in precision engineering, energy and chemicals, engineering services, and more
- Explore specialisations in Automation Design Engineering or Mobility Design Engineering; or one of three Cross-Disciplinary Specialisations

Mechatronics & Robotics (N50) Revamped
- Delve into autonomous mobile and collaborative robotics, and gain hands-on skills to drive innovation in robotics engineering and automation
- Choose to specialise in Autonomous Systems, Automation & Industrial Cybersecurity, AI for Engineers or Space Technology; or deepen your real-world experience through a one-year industry immersion
- Pursue a Second Major in Business for expanded career pathways and opportunities!

Offshore & Sustainable Engineering (N42)
- Unique diploma in naval architecture focused on sustainability, decarbonisation, and renewable energy, preparing you for careers in the marine and offshore engineering sector
- Explore exciting opportunities in clean and renewable energy, such as offshore wind
- Choose to specialise in AI for Engineers or Operational Technology Cybersecurity

What Industry Says

"At Siemens, we believe in empowering young talent with the right skills and real-world experience. Through co-developing a cybersecurity course that aligns with CSA requirements and offering hands-on internships for students in the Mechatronics & Robotics course, we are equipping them with critical capabilities in software-defined automation. This will prepare them for a smarter, safer and more resilient industrial future."

Isabel Chong
Senior Vice President
Siemens Digital Industries, ASEAN

"Sustainability is key to Grundfos' DNA, and our partnership with NP reflects our commitment to cleaner, energy-efficient technologies that reduce energy use and carbon footprints in the built environment. We look forward to inspiring students to advance the region's sustainability goals."

Kenth Hvid Nielsen
Head of Global Marketing
Commercial Buildings
Grundfos

Why Choose SOE

An Xtra Edge

Stretch your potential with prestigious scholarships and our talent development programmes. Plus, get global-ready through overseas internships and immersion programmes to vibrant cities such as Shanghai and Ho Chi Minh City.

Sustainability Focus

With our comprehensive on-campus green energy infrastructure, there's no better place to acquire the skills to seize opportunities in the growing renewable energy field.

Own Your Learning

Choose where and how you learn – so you gain the exposure and build the portfolio you want. This way, you'll be well positioned for your dream career! Refer to page 6 for more information.

Partnerships with the Best in the Business

Gain real-world experience, expand your professional network, and build skills for a bright future!

AVEVA, aws academy, BECKHOFF, Cisco Networking Academy Partner, DELTA, EQUIP, FESTO, FORTINET, GRUNDFOS, Hanwha Offshore Singapore, HOPE technik, HYUNDAI MOTOR GROUP, JET AVIATION A GENERAL DYNAMICS COMPANY, LKH PRECICON, meiban

Get Future-Ready

Level up in the dynamic engineering landscape of tomorrow with our new **Cross-Disciplinary Specialisations**! Whichever specialisation you choose, you'll develop transferable skills to address real-world challenges in emerging tech fields. Our revamped curriculum also allows all engineering students to build in-demand AI competencies throughout your course of study. You'll graduate AI-savvy, adaptable and ready to meet industry's evolving needs!

Space Technology

Gain a head start in the growing space tech industry with in-demand skills across aerospace and smart infrastructure sectors. You'll get the chance to work with NUS to build your own miniature satellite for your Capstone Project!

Operational Technology Cybersecurity

Tackle vulnerabilities across multiple sectors as a new-gen engineer! With a strong foundation in specialised cybersecurity skills, you'll safeguard critical infrastructure in the fields of energy, water, transport, healthcare, and beyond!

AI for Engineers

As AI becomes a key enabling technology across engineering sectors, stay ahead of the curve by diving into machine and deep learning plus neural networks, and discover how they can solve complex engineering problems!

MOOREAST, Moovita, NUHS National University Health System, OMRON, PaxOcean, SCHAEFFLER, Seatrium, SIA ENGINEERING COMPANY, SMC, SIEMENS, ST Engineering, UMC, UNIVERSAL ROBOTS, YINSON GreenTech

go flex at SOE

Scan this QR code for more details about Go FLEX

Shape a learning journey that matches your unique interests with NP's Go FLEX (Flexible Learning EXperience) and get a head start on your further studies and career!

Go BROADER

Personalised Learning Pathway (PLP) Minor

With **12 Minors** and **>50 Learning Units (LUs)**, unlock possibilities by pairing your diploma with one of the following Minors:

- Applied Psychology
- Cybersecurity
- Data Analytics & AI
- Entrepreneurship
- Environmental Sustainability
- Foreign Languages
- Global Readiness
- Robotics & Innovation
- Social Leadership
- Social Media Marketing
- Sustainable Care
- User Experience Design

Check out the wide range of LUs at **www.np.edu.sg/plp**

Go FURTHER

Passion+ Pathways

Kick-start your entrepreneurial journey or venture into Southeast Asia with confidence through our signature **Global Entrepreneurial Internship Programme** and **Southeast Asia Immersion Leadership Programme**.

Go GLOBAL

Overseas Programmes

Whether it's an **Overseas Immersion Programme**, **Overseas Domain Internship**, **Global Entrepreneurial Internship Programme**, **Youth Expedition Project** or **Regional Learning Journey**, you'll see the world in brand new ways!

Go DOUBLE

Double Major

ECE, EE and MR students can opt for a **Second Major in Business** – delivered by NP's esteemed School of Business & Accountancy – to supercharge career and further study options!

Go DEEPER

Specialisations

Expand your skill set with SOE's new **Cross-Disciplinary Specialisations**! Most of our courses also offer course-specific specialisations to deepen your expertise.

Go DIRECT

University Pathways

BME and ES students can apply to the **Poly SUTD Scholars Programme** or **NP-NUS Pathway** to fast-track to a degree!

Go LONGER

One-year Industry Immersion

Partnering top-notch organisations, SOE lets you build skills and professional networks with our **one-year internship programmes**.

Get latest updates on course

N71

Common Engineering Programme

- The best way to **explore different engineering fields** to discover your interests before deciding on one of eight diplomas
- **Common foundational modules** equip you with broad-based fundamental knowledge and skills in engineering
- **Unique Induction Programme** provides early industry exposure and insights to help you make an informed course choice

WHAT THE COURSE IS ABOUT

If you are keen on engineering but unsure which course suits you, the Common Engineering Programme (CEP) may be the perfect fit. Through CEP, you will gain exposure to different engineering domains, helping you make a more informed course choice.

In your first semester, experience our unique Induction Programme, which includes learning journeys, industry visits, dialogues, and career advice from experts. The Diploma Exposure Programme will also give you an overview of the exciting career pathways that lie ahead!

Furthermore, you will build a strong foundation in mechanical, electronic and electrical engineering, as well as mathematics and programming. Then, put your new-found knowledge into practice by working on exciting projects that will boost your portfolio!

Towards the end of your first semester, you can choose from one of our eight engineering diplomas.

OVERVIEW OF YOUR CEP JOURNEY

Year 1 First Semester

Common Engineering Modules

Year 1 Second Semester

Pursue one of our 8 engineering diplomas to further your interests

- Engineering Science
- Electronic & Computer Engineering
- Aerospace Engineering
- Mechanical Engineering
- Biomedical Engineering
- Mechatronics & Robotics
- Electrical Engineering
- Offshore & Sustainable Engineering

WHAT YOU WILL LEARN

YEAR 1

- Engineering Mathematics 1
- Electrical Engineering Fundamentals
- Mechanical Engineering Fundamentals
- Programming
- Career & Engineering Professional Preparation
- Confident Communication: Find Your Voice (VOICE)^
- Innovation Made Possible^
- Health & Wellness^
- English Language Express^*

You will select your preferred diploma towards the end of your first semester. Refer to the module listing in the respective diploma pages for more details:

- Engineering Science (page 11)
- Aerospace Engineering (page 17)
- Biomedical Engineering (page 22)
- Electrical Engineering (page 27)
- Electronic & Computer Engineering (page 32)
- Mechanical Engineering (page 37)
- Mechatronics & Robotics (page 42)
- Offshore & Sustainable Engineering (page 47)

YEAR 2

- Core modules under the engineering diploma you major in
- World Issues: A Singapore Perspective^

YEAR 3

- Core modules under the engineering diploma you major in
- Project ID: Connecting the Dots^

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

Refer to the Further Studies section on the respective diploma pages.

CAREER

Refer to the Career section on the respective diploma pages.

FINDING THE RIGHT PATH

"When I first joined CEP, I was undecided on which diploma to pursue. Through the Diploma Exposure Programme and an industry visit to Micron, I witnessed first-hand the cutting-edge processes involved in microelectronics manufacturing. These experiences solidified my choice to pursue the Diploma in Electronic & Computer Engineering!"

Timothy Koh
Third-year Electronic & Computer Engineering student

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf**.

For students with other qualifications please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with colour vision deficiency, severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Common Engineering Programme, log on to **www.np.edu.sg/cep**

Get latest updates on course

N93

Diploma in
Engineering Science

- A unique engineering course with a strong focus on **mathematics**, **physics and computing**, designed for university-bound students
- Acquire in-demand skills for the future economy by specialising in either **AI for Autonomous Systems**, **Data Analytics & Security**, **Operational Technology Cybersecurity** New or **Space Technology** New
- Develop valuable **applied R&D** experience at top local universities and research institutes that will build your expertise and network
- Opportunities to secure **prestigious scholarships** from PSC, A*STAR, DSO and DSTA!

WHAT THE COURSE IS ABOUT

You're passionate about engineering applications, but also love the sciences. You're strong in both maths and physics. You enjoy scientific research and discovering new ways to solve problems. How about honing all these interests through our top-notch Diploma in Engineering Science (ES), whose students have topped NP's graduating cohorts and secured places in prestigious university programmes?

The unique ES diploma prepares you well for a wide range of degrees and careers in fields such as artificial intelligence and machine learning; computer, electronic and mechanical engineering; as well as data analytics.

During the first two years, you will be equipped with a strong foundation in engineering and related domains such as mathematics, physics, computing and applied science.

In your third year, you can choose one of these exciting specialisations to deepen your knowledge in emerging technologies:

- **AI for Autonomous Systems**
  Develop the skills to create autonomous system solutions for the transportation sector. Explore autonomous vehicle technology and gain hands-on experience with smart urban mobility projects.

- **Data Analytics & Security**
  Master big data and build expertise in data analytics and security management for cloud platforms – skills that are highly sought-after in today's digital landscape.

- **Operational Technology Cybersecurity** New
  As new-gen engineers, be equipped with domain-specific cybersecurity competencies to safeguard critical infrastructure against vulnerabilities.

- **Space Technology** New
  Gain skills in areas such as satellite design and systems engineering to meet the increasing demand across aerospace and smart infrastructure sectors.

Alternatively, you can opt for one of these learning pathways:

- **Industry Immersion Pathway**
  Gain real-world experience and expand your professional network as you take on a one-year internship or project with one of our renowned partner organisations.

- **University Pathway Programmes**
  Start your uni studies ahead of your peers, thanks to our University Pathway Programmes with NUS and SUTD! Both pathways let you read uni modules in your final year, allowing you to earn credits that count towards your future degree!

Early University Exposure
A key highlight of ES is early exposure to a university environment. From your first semester in Year 3, you will spend half a day per week at local universities, working on applied industrial or R&D projects under the guidance of university faculty.

These projects can be extended into your final-year project, where you will explore cutting-edge research and technology innovations to enhance your portfolio. Choose from a wide variety of topics, including artificial intelligence, autonomous vehicles, the Internet of Things, robotics, green energy, and material science.

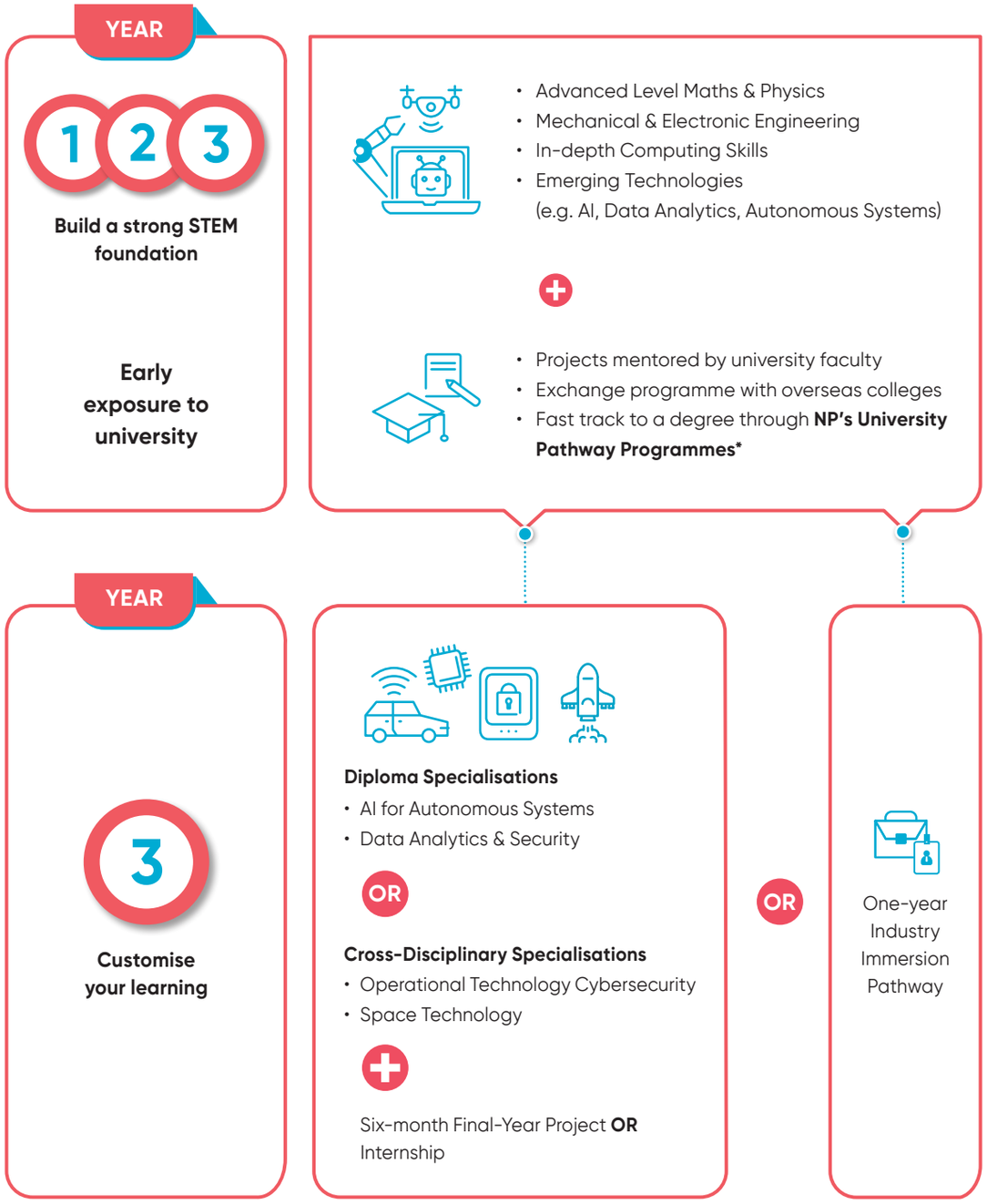
If you're looking for an Engineering diploma that attracts the brightest minds, look no further!

>10 ES graduates topped their cohorts to clinch the Ngee Ann Kongsi Gold Medal or Lee Kuan Yew Award since 2014

>10 ES students received NP as well as external scholarships e.g. A*STAR Science Award (Poly), CSIT Diploma Scholarship, DSTA Polytechnic Scholarship, DSO Diploma Scholarship which offer R&D internship opportunities

>80% ES graduates offered admission into prestigious local and overseas universities

OVERVIEW OF YOUR ES JOURNEY



*For selected students.

WHAT YOU WILL LEARN

YEAR 1
- AC Circuits
- Analogue Electronics
- Applied Mathematics 1 & 2
- Digital Fundamentals
- Electrical Engineering Fundamentals
- Fundamental Electronic & Electrical Skills
- Mechanical Engineering Fundamentals
- Programming
- Career & Engineering Professional Preparation
- Innovation Made Possible^
- Confident Communication: Find Your Voice (VOICE)^
- Health & Wellness^
- English Language Express^*

YEAR 2
- Applied Mathematics 3
- Data Structure & Algorithms
- Engineering & Sustainability
- Materials & Manufacturing Technology
- Microcontroller & Interfacing
- Object Oriented Programming
- Physics 1 & 2
- System Modelling & Control
- Thermofluids
- World Issues: A Singapore Perspective^

YEAR 3
- AI & Machine Learning
- Final-year Project OR Six-month Internship (Local/Overseas)
- Project ID: Connecting the Dots^

Choose one of these specialisations:

AI for Autonomous Systems Specialisation
- Autonomous Systems & IoT
- Computer Vision & Deep Learning
- Design Project in AI

Data Analytics & Security Specialisation
- Data Analytics & Cloud Fundamentals
- Data Security & Blockchain
- Design Project in Data Analytics

Operational Technology Cybersecurity Specialisation
- Cyber Governance, Risk & Compliance
- Fundamentals of OT Cybersecurity
- Industrial Automation

Space Technology Specialisation
- Capstone Project: CanSatellite
- Satellite Systems Design and Engineering

Or opt for the Industry Immersion Pathway
- One-year Internship OR One-year Project

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self- directed learners, ready for the future workplace.

^* For selected students.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

Both NTU and NUS recognise ES for a wide range of their degree programmes. SUTD offers conditional admission for students under the Poly SUTD Scholars Programme, along with module exemptions for ES graduates.

Selected ES students in the NP-NUS pathway can take NUS modules during their studies at NP for additional credit exemptions to fast track their degree.

With your strong ES foundation, you can also apply for a variety of degree programmes at overseas universities.

FURTHER EDUCATION PREP

"The strong focus on research & development in Engineering Science was what drew me to the course. The exposure to different engineering disciplines helped me discover my passion for data science and AI research. With ES's emphasis on mathematics and physics, I am more confident in tackling my university studies!"

Saffron Salmah Yen Lim
Class of 2023

Recipient of the Public Service Commission (Engineering) Scholarship, Ngee Ann Kongsi Gold Medal and the Lee Kuan Yew Award. Pursuing a degree in Artificial Intelligence & Data Science at NTU.

They chose ES and are going places!

Duan Jiafei
Class of 2016

A*STAR National Science Scholar pursuing a PhD in AI & Robotics at University of Washington, USA

Joshua Tan
Class of 2019

Recipient of the Home Team Science & Technology (HTX) Scholarship. Pursuing a degree in Physics with a minor in Computer Science at NUS

Kellie Sim
Class of 2020

Pursuing a PhD in Human-AI interaction and Mental Health at SUTD under the A*STAR Computing and Information Science Scholarship

Reuben Thomas
Class of 2021

Recipient of the Ngee Ann Kongsi Gold Medal and the Lee Kuan Yew Award. Pursuing a Computer Science degree at NUS

Anne Lee
Class of 2022

Pursuing a master's degree in Design Engineering at Imperial College London's Dyson School of Design Engineering under the DSTA Overseas Scholarship

Nar Kang Jing
Class of 2024

Recipient of the Lee Kuan Yew Award & Ngee Ann Polytechnic Outstanding Achievement Award. Pursuing a degree in Computer Science at NUS

Jeremy Goh
Class of 2025

Recipient of the Ngee Ann Polytechnic Outstanding Achievement Award. Will be pursuing a degree in Computer Engineering at NUS

CAREER

Armed with an ES Diploma, you will enjoy good career prospects in areas such as research and development, product design and development, manufacturing and services.

Dr Lim Leh Woon
Class of 2014
Scientist in the Photonics team at A*STAR's Institute of Microelectronics

Zenas Lim
Class of 2015
Senior AI Product Manager at Boston Consulting Group

Foo Fang Wei
Class of 2016
Solutions Architect at ST Engineering

Soon Qing Rong
Class of 2017
Engineer at DSTA's Command, Control and Communications (C3) Development Programme Centre

DEVELOPING A STRONG RESEARCH FOUNDATION

"ES introduced me to the world of research which was pivotal in my academic journey. The early opportunities provided for independent research instilled in me a passion for discovery and innovation".

Gokul Nathan
Class of 2016
The co-founder and CEO of Guide Air LABS is pursuing a PhD in Electrical and Computer Engineering at the University of Washington, USA.

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf.**

For students with other qualifications please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with colour vision deficiency, severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Diploma in Engineering Science, log on to **www.np.edu.sg/es**

Get latest updates on course

N65

Diploma in
Aerospace Engineering

- Gain **sought-after digital skills** in additive manufacturing, data analytics, artificial intelligence, machine learning, robotics and drones
- Focus on either **Avionics** or **Mechanical** from Year 1; Choose from one of our **Cross-Disciplinary Specialisations** New in Year 3:
  - AI for Engineers
  - Operational Technology Cybersecurity
  - Space Technology
- Opportunities to **design and build your own aerial vehicle**
- Build a strong engineering foundation with **green aviation concepts** integrated into curriculum

WHAT THE COURSE IS ABOUT

Fascinated by flying machines? Dream of shaping next-generation aircraft? Join our Diploma in Aerospace Engineering (AEG) and power the future of aviation.

With this broad-based diploma, you will gain a strong engineering foundation and discover how you can play a role in this fast-growing sector!

Future-ready Curriculum
As more companies leverage the power of big data to monitor aircraft health and predict maintenance schedules, you will be equipped with next-gen skills such as data analytics, artificial intelligence and machine learning.

With green aviation concepts integrated into the AEG curriculum, you can contribute significantly to environmental sustainability efforts within the aerospace sector!

Two Exciting Options
Towards the end of your first semester in Year 1, you can choose from two options:

- **Avionics**
  Study the principles of flight and explore sophisticated aircraft systems, including navigation, surveillance, data communication, and networking systems.

- **Mechanical**
  Learn about engineering system design, aircraft structures and materials, advanced thermofluids, and aircraft maintenance practices.

Cross-Disciplinary Specialisations New
To get you future-ready for the dynamic engineering landscape, SOE's brand-new specialisations will give you a distinct edge.

- **AI for Engineers**
  Develop deep, domain-specific AI expertise by gaining skills in machine learning, neural networks and deep learning.

- **Operational Technology Cybersecurity**
  Acquire cybersecurity competencies to keep industrial operations and critical infrastructure in sectors like transport and healthcare secure.

- **Space Technology**
  Gain frontier skills in space tech! Learn about satellite design and systems engineering to meet the increasing demand across aerospace and smart infrastructure sectors.

Strong Industry Links
Our strong links with industry will provide you with real-world learning experiences. Co-delivered with SIA Engineering Company, the Digital Maintenance, Repair and Overhaul Application module gives you valuable insights into the aerospace industry.

You will also get opportunities to apply your skills on exciting projects. For example, design and build an unmanned aerial vehicle to explore applications for this technology!

In your final year, embark on a six-month local or overseas internship with companies like SIA Engineering Company, Collins Aerospace, Pratt & Whitney, ST Engineering, and Thales Solutions Asia. Alternatively, go for the Industry Immersion Pathway for a year of hands-on experience. Both options provide real-world exposure to give you a strong head start in your further studies and career.

Students who are interested in getting their Private Pilot Licence (PPL) can choose to participate in the Singapore Youth Flying Club PPL Course as their internship.

OVERVIEW OF YOUR AEG JOURNEY

Key focus areas

- Common Engineering Modules
- Aerospace MRO
- Digital Skills

Deepen your skills

Choose between 2 options:

Avionics **OR** Mechanical

Your learning experience

- Design and build an unmanned aerial vehicle
- Curriculum aligned with industry requirements for aircraft engineers
- Hands-on learning in a flight simulator and on real aircraft at the Aerospace Hub

Customise your learning

Choose from 3 Cross-Disciplinary Specialisations

- AI for Engineers
- Operational Technology Cybersecurity
- Space Technology

Six-month Final-Year Project **OR** Internship

OR

One-year Industry Immersion Pathway

WHAT YOU WILL LEARN

YEAR 1

- Aerospace Fundamentals
- Engineering Mathematics 1 & 2
- Electrical Engineering Fundamentals
- Mechanical Engineering Fundamentals
- Programming
- Career & Engineering Professional Preparation
- Confident Communication: Find Your Voice (VOICE)^
- Innovation Made Possible^
- Health & Wellness^
- English Language Express^*

Choose one of the following options:

Avionics Option
- Analogue Electronics
- Digital Fundamentals
- Fundamental Electronic & Electrical Skills

Mechanical Option
- Electrical & Electronics Technology
- Materials & Manufacturing Technology
- Thermofluids

YEAR 2

- Aero360: Human Factors, Law & Sustainable MRO
- System Modelling & Control
- World Issues: A Singapore Perspective^

Avionics Option
- Aircraft Data Communications & Networking
- Aircraft Material & Maintenance Practices
- Aircraft Electrical & Electronics
- Aircraft Navigation & Surveillance Systems
- Applied Digital Electronics
- Avionics Maintenance Practices
- Object-oriented Programming

Mechanical Option
- Advanced Thermofluids
- Aircraft Maintenance Practices
- Aircraft Structures & Materials
- Applied Mechanics
- Aircraft Propulsion Systems
- Engineering Drawing Fundamentals
- Engineering System Design
- Strength of Materials

YEAR 3

- Aerial System Design & Integration
- Digital Maintenance, Repair & Overhaul Application
- Quality System & Analytics
- Final-year Project OR Six-month Internship (Local/Overseas)
- Project ID: Connecting the Dots^

Choose one of these specialisations:

AI for Engineers Specialisation
- Fundamentals of Machine Learning
- Fundamentals of Neural Networks and Deep Learning
- Integrated Projects in Machine Learning

Operational Technology Cybersecurity Specialisation
- Cyber Governance, Risk & Compliance
- Fundamentals of OT Cybersecurity
- Industrial Automation

Space Technology Specialisation
- Capstone Project: CanSatellite
- Satellite Systems Design and Engineering

Or opt for one of the following:

Avionics Option
- Aircraft Electrical & Instrumentation Systems
- Computer Vision in Aviation

Mechanical Option
- Engine Maintenance, Repair & Overhaul
- Aircraft Mechanical Systems

Industry Immersion Pathway
- One-year Internship OR One-year Project

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^* For selected students.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

As an AEG graduate, you will be able to pursue an aerospace-related degree at Singapore Institute of Technology and Singapore University of Social Sciences, or overseas universities in Australia, New Zealand, USA and the UK.

Or you can choose to pursue related engineering degrees with advanced standing at prestigious local universities like National University of Singapore, Nanyang Technological University, and Singapore University of Technology and Design.

Jeremy Tan
Class of 2023
The recipient of the Ministry of Transport Family Beacon Scholarship is currently pursuing Mechanical Engineering with a minor in Business Analytics at NUS

Taryn Kang
Class of 2024
Pursuing Electrical Engineering with a specialisation in Advanced Electronics at NUS

CAREER

As a leading aerospace hub in Asia, Singapore continues to see strong demand for trained professionals. AEG is recognised by established aerospace organisations, giving you an edge in job roles such as:

- Quality Engineer
- Technical Service Engineer
- Workshop Engineer
- Senior Technician (Engine/Component Repair & Overhaul)
- Senior Technician (Avionics/Mechanical)

Additionally, AEG prepares you for Civil Aviation Authority of Singapore (CAAS) Airworthiness Requirements (SAR 66) exams, giving you a head start towards becoming a licensed Aircraft Maintenance Engineer.

SAF-Polytechnic Sponsorship New
You can also start your military aviation career in your final year at NP! Sign up for the SAF-Polytechnic Sponsorship and look forward to a role in keeping our Air Force's aircraft flying high.

Denzel Lee
Class of 2015
Chief Technology Officer and co-founder of Datature Analytics

Aw Yuh Shi
Class of 2020
Air Force Engineer at Republic of Singapore Air Force

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf.**

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with colour vision deficiency, severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Diploma in Aerospace Engineering, log on to **www.np.edu.sg/aeg**

Get latest updates on course

N60

Diploma in
Biomedical Engineering

- The first poly diploma that integrates **engineering with life sciences**, with a focus on **emerging sectors such as healthcare cybersecurity**
- Get future-ready by acquiring transferable skills in niche engineering fields by specialising in **AI for Engineers** New, **Operational Technology Cybersecurity** New or **Space Technology** New
- Gain real-world industry experience through **immersion programmes** with leading MedTech companies and healthcare institutions
- Accelerate your learning with our exclusive **University Pathway Programmes** with **NUS** or **SUTD**!

WHAT THE COURSE IS ABOUT

Fascinated by how engineering and biology can benefit society? Do you wish to develop innovative solutions that advance the work of medical professionals? If this sounds like you, then the Diploma in Biomedical Engineering (BME) is perfect for you.

The fast-growing MedTech field is responsible for the design and innovation of sophisticated medical devices and healthcare equipment such as personal health trackers — which range from wearable glucose meters to electrocardiography (ECG) monitors — and lifesaving devices such as the pacemaker and dialysis machine. It also includes the development of prosthetic and orthotic devices that support patients in their movement or recovery, improving patient care through technological advancements.

Jointly developed with leading industry partners, BME gives you a firm grounding in research that could lead to the discovery and development of more efficient and effective tools for medical treatment.

A Holistic Curriculum
BME will provide you with a solid grounding in both engineering and the life sciences. You will acquire a strong foundation in emerging areas such as healthcare Artificial Intelligence (AI) and Internet of Medical Things (IoMT).

Learn about MedTech engineering, and be equipped with knowledge of relevant quality assurance standards plus industry best practices. Our partnerships with industry will ensure that you stay on top of industry developments and the latest strategies, such as Lean Six Sigma, to improve efficiency.

Develop Skills in Emerging Technologies
As medical devices become more connected, there is an increased need to ensure these devices are safe from cyber threats. BME will equip you with the skills to embed cybersecurity requirements in the development of MedTech solutions, as well as emerging technologies which are increasingly adopted for clinical applications.

Cross-Disciplinary Specialisations New
To get you future-ready for the dynamic engineering landscape, SOE's brand-new specialisations will give you a distinct edge.

- **AI for Engineers**
  Develop deep, domain-specific AI expertise by gaining skills in machine learning, neural networks and deep learning.

- **Operational Technology Cybersecurity**
  Acquire cybersecurity competencies to keep industrial operations and critical infrastructure in sectors like transport and healthcare secure.

- **Space Technology**
  Gain frontier skills in space tech! Learn about satellite design and systems engineering to meet the increasing demand across aerospace and smart infrastructure sectors.

Industry-relevant Learning
To deepen your skills and gain industry experience, you can choose a six-month internship or take on a Final-Year Project sponsored by top multinational companies, leading MedTech organisations, innovative local start-ups, and established healthcare institutions such as Equip Medical, Meiban Medical, and the National University Health System.

Industry Immersion Pathway
For more extensive industry exposure, consider the one-year Industry Immersion Pathway. Whether you choose a year-long internship or a project, you will have the opportunity to deepen your industry knowledge, build stronger professional networks, and gain valuable experience to broaden your study and career options.

University Pathway Programme
Get a head start on your university studies with the NP-NUS Pathway and Poly SUTD Scholars Programme! Both programmes let you read university modules and earn credits toward your future degree at either of these prestigious universities while studying at NP.

OVERVIEW OF YOUR BME JOURNEY

Key focus areas

LIFE SCIENCES

- Biomechanics & Biomaterials
- Cell & Molecular Biology
- Human Physiology

DESIGN & DEVELOPMENT

- Computing Device Fundamentals
- Analogue Circuit Design & Analysis
- Engineering Skills Practice

MEDTECH ENGINEERING

- Clinical Engineering
- Fundamentals of Medical Technology
- Medical Technology Instrumentation

DATA & SECURITY

- Cybersecurity for Medical Devices
- Internet of Medical Things
- Network & Informatics

Wide-ranging learning opportunities

- Work on university-linked or industry-sponsored MedTech projects
- Gain hands-on experience through internships at MedTech companies and healthcare institutions and Internet of Medical Things companies
- Participate in industry visits to leading MedTech companies and healthcare institutions
- Fast track to a degree with the NP-NUS or Poly SUTD Scholars Programme*

Customise your learning

Choose from 3 Cross-Disciplinary Specialisations

- AI for Engineers
- Operational Technology Cybersecurity
- Space Technology

1 Elective & Six-month Final-Year Project **OR** Internship

OR

Capstone Project

2 Electives & Six-month Final-Year Project **OR** Internship

OR

One-year Industry Immersion Pathway

*For selected students.

WHAT YOU WILL LEARN

YEAR 1

- Computing Device Fundamentals
- Electrical Engineering Fundamentals
- Engineering Mathematics 1 & 2
- Fundamentals of Medical Technology
- Human Physiology
- Mechanical Engineering Fundamentals
- Programming
- Career & Engineering Professional Preparation
- Confident Communication: Find Your Voice (VOICE)^
- Innovation Made Possible^
- Health & Wellness^
- English Language Express^*

YEAR 2

- Analogue Circuit Design & Analysis
- Biomechanics & Biomaterials
- Cell & Molecular Biology
- Clinical Engineering
- Cybersecurity Essentials
- Engineering & Sustainability
- Engineering Skills Practice
- Medical Technology Instrumentation
- Network & Informatics
- World Issues: A Singapore Perspective^

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

YEAR 3

- Final-year Project OR Six-month Internship
- Project ID: Connecting the Dots^

Electives

- Process & Optimisation
- Medical Data Analytics
- Internet of Medical Things

Choose one of these specialisations:

AI For Engineers Specialisation

- Fundamentals of Machine Learning
- Fundamentals of Neural Networks and Deep Learning
- Integrated Projects in Machine Learning
- 1 Elective Module

Operational Technology Cybersecurity Specialisation

- Industrial Automation
- Fundamentals of OT Cybersecurity
- Cyber Governance, Risk & Compliance
- 1 Elective Module

Space Technology Specialisation

- Capstone Project: CanSatellite
- Satellite Systems Design and Engineering
- 1 Elective Module

Or opt for one of the following:

Capstone Project

- Capstone Project
- 2 Elective Modules

Industry Immersion Pathway

- One-year Internship (Local/Overseas) OR One-year Project

FURTHER STUDIES

Pursue various degree programmes at local universities or gain credit exemptions at the following overseas universities:

Australia
- University of New South Wales
  - Bachelor of Engineering (Honours)
- Queensland University of Technology
  - Bachelor of Engineering (Honours) (Medical)
- University of Queensland
  - Bachelor of Engineering (Honours)
- University of Sydney
  - Bachelor of Engineering (Honours) (Biomedical)

United Kingdom
- University of Sheffield
  - Bachelor of Engineering (Biomedical Engineering)
- Cardiff University
  - Bachelor of Engineering

Evan Chew
Class of 2025
The recipient of the NTU Dean's Award will be pursuing NTU's Renaissance Engineering programme

CAREER

With Singapore fast becoming a global hub for biomedical research and the healthcare industry, you can look forward to pursuing careers in these roles:

- Assistant Hospital Engineer
- Biomedical Engineering Specialist
- Field Service Engineer
- Quality Assurance Specialist
- Quality Control Laboratory Analyst
- Research Associate
- Sales Engineer

Peggy Yeo
Class of 2016
Clinical Application and Regulatory Specialist at Ziehm Imaging

As part of the SkillsFuture initiative, you can enrol in various skills-deepening programmes or apply for the SkillsFuture Work-Study Post-Diploma Programme upon graduation. You may also apply for Workforce Skills Qualifications (WSQ) courses, such as the Specialist Diploma in Workplace Safety & Health.

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf.**

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with colour vision deficiency, severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Diploma in Biomedical Engineering, visit **www.np.edu.sg/bme**

Get latest updates on course

N43

Diploma in
Electrical Engineering

- The only dedicated electrical engineering diploma in Singapore with an **emphasis on sustainability**
- Strong focus on growth areas in **electrification**, **decarbonisation**, and **digitalisation** to unlock exciting opportunities in the **green energy economy**!
- Choose from **multiple pathways** to meet your unique aspiration
- Unlock new opportunities for your career and further studies with a **Second Major in Business** or **Cross-Disciplinary Specialisations** New in emerging fields

WHAT THE COURSE IS ABOUT

As Singapore progresses towards a sustainable future under the SG Green Plan 2030, the Diploma in Electrical Engineering (EE) equips you with the expertise to transform the energy landscape.

Focusing on electrification, digitalisation, and decarbonisation, this course prepares you for the demands of a low-carbon economy. Through a future-ready curriculum, you will gain the skills to drive sustainable energy solutions and contribute to Singapore's green transition.

Develop a Strong Foundation
Build a strong foundation in designing and operating electrical systems, from sustainable technologies like solar energy and energy storage to the electrification of homes, transport, and industries. You will also explore the digital transformation of the energy sector, leveraging smart grids, data analytics, and Artificial Intelligence (AI) to optimise energy use and enhance system efficiency.

Industry-relevant Learning
Engage in real-world learning through the EE curriculum, where you will get to work with leading industry players such as Beckhoff Automation, National Instruments, Delta Electronics and Yinson GreenTech.

THE FUTURE IS GREEN

Thanks to our collaboration with Yinson GreenTech, you can explore real-world engineering solutions through our green energy infrastructure. Comprising the IoT-enabled smart energy management technology centre synergy.lab, a solar farm, and on-site EV charging facilities, this purpose-built living lab is designed to prepare you for exciting careers in the renewable energy field.

Own Your Learning
You can personalise your learning journey with these pathways:

- **Smart Energy System Specialisation**
  Drive digital transformation of the energy sector through advanced sensors, IoT devices, and AI to implement smart energy management.

- **Sustainable Power Engineering Specialisation**
  Dive into electrical distribution and utility systems while exploring sustainable energy technologies. Explore clean energy solutions such as solar photovoltaic systems, and develop the skills to design, integrate, and manage these systems effectively.

- **Cross-Disciplinary Specialisations** New
  Get future-ready by acquiring transferable skills in niche engineering fields by specialising in **AI for Engineers, Operational Technology Cybersecurity** or **Space Technology**. Refer to Page 5 for more information.

- **Elective Modules Option**
  Select four electives to explore emerging technological trends and concepts. This option enhances your career resilience and keeps you competitive as Singapore's energy landscape evolves.

- **Capstone Project Option**
  Apply your knowledge to tackle real-world challenges while deepening your technical expertise.

- **Industry Immersion Pathway**
  Gain real-world experience, expand your professional network, and build skills for your future with the Industry Immersion Pathway, which offers a choice between a one-year internship or project.

- **Double Major**
  Get an extra edge by pursuing a Second Major in Business*, delivered by NP's esteemed School of Business & Accountancy. This dual qualification will unlock new opportunities for your career and further studies.

*For selected students.

OVERVIEW OF YOUR EE JOURNEY

Key focus areas

Electrification & Power Systems
- Electrical Installation Design
- Electric Vehicles & Charging Technologies
- Power System Design & Operation

Decarbonisation & Clean Energy Systems
- Solar Photovoltaic System
- Sustainable Energy Technologies

Digitalisation & Smart Systems
- Data Analysis & Visualisation
- IoT System & Applications
- LabVIEW Application
- PLC & System Integration

Choose from 5 pathways

Diploma Specialisations
- Smart Energy System
- Sustainable Power Engineering

OR

Cross-Disciplinary Specialisations
- AI for Engineers
- Operational Technology Cybersecurity
- Space Technology

Elective Modules

Capstone Project

Second Major in Business*

One-year Industry Immersion Pathway

Six-month Final-Year Project **OR** Internship

Career prospects

With well-rounded skill sets, including in-demand skills in sustainability and digitalisation, you will be well prepared for careers in the green energy economy, as well as sustainability-related sectors ranging from energy and power to transport and the built environment.

*For selected students.

WHAT YOU WILL LEARN

YEAR 1
- AC Circuits
- Analogue Electronics
- Digital Fundamentals
- Electrical Engineering Fundamentals
- Engineering Mathematics 1 & 2
- Engineering Practical Skills
- Mechanical Engineering Fundamentals
- Programming
- Career & Engineering Professional Preparation
- Confident Communication: Find Your Voice (VOICE)^
- Innovation Made Possible^
- Health & Wellness^
- English Language Express^*

YEAR 2
- Computer-Aided Design*
- Data Analysis & Visualisation*
- Electric Circuit Analysis
- Electrical Installation Design
- Electrical Machines
- Engineering & Sustainability
- LabVIEW Application*
- Microcontroller & System
- Power Electronics
- Power Systems Design & Operation
- PLC & System Integration
- World Issues: A Singapore Perspective^

Second Major in Business
- Economics
- Finance & Accounting for Business
- Marketing
- Global Business

YEAR 3
- Final-Year Project OR Six-month Internship
- Project ID: Connecting the Dots^

Choose one of these specialisations:

Smart Energy System Specialisation
- Energy Management & Studies
- IoT System & Applications
- Solar Photovoltaic System
- Smart Grid Technologies

Sustainable Power Engineering Specialisation
- Solar Photovoltaic System
- Sustainable Energy Technologies
- System Modelling & Control
- Electric Vehicle & Charging Technologies

AI for Engineers Specialisation
- Fundamentals of Machine Learning
- Fundamentals of Neural Networks and Deep Learning
- Integrated Projects in Machine Learning

Operational Technology Cybersecurity Specialisation
- Cyber Governance, Risk & Compliance
- Fundamentals of OT Cybersecurity
- Industrial Automation

Space Technology Specialisation
- Capstone Project: CanSatellite
- Satellite Systems Design and Engineering

Or opt for one of the following:

Any 4 electives:
- Electric Vehicle & Charging Technologies
- Energy Management & Studies
- IoT System & Applications
- Smart Grid Technologies
- Solar Photovoltaic System
- Sustainable Energy Technologies
- System Modelling & Control

Capstone Project
- Capstone Project
- IoT System & Applications
- System Modelling & Control

Industry Immersion Pathway
- One-year Internship (Local/Overseas) OR One-year Project

Second Major in Business
- Corporate Finance
- Develop a Business
- Foundations of Law
- Integrated Marketing Communication
- People & Culture

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students.

* Not applicable to students taking Second Major in Business

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

You may be granted advanced standing or module exemptions when applying for related degree programmes at local universities and overseas universities in countries such as Australia and the United Kingdom.

Graduates can further upgrade their skills through the Specialist Diploma in Solar Photovoltaic Engineering and Monitoring offered by NP.

Ryan Soh
Class of 2023
Pursuing NTU's Renaissance Engineering Programme, which leads to a dual degree: a Bachelor of Engineering Science and a Master of Science in Technology Management

Jasmine Teo
Class of 2025
Pursuing a degree in Electrical Engineering at NUS

CAREER

To meet the objectives of the Singapore Green Plan 2030, electrical engineers are increasingly in demand across sustainability-related sectors such as energy and power, the built environment, and transport. You can look forward to pursuing rewarding careers in these job roles:

- Assistant Engineer (Power, Project Development, Commissioning, Operation and Maintenance)
- Solar PV Project Development Supervisor
- Technical Officer (Power Distribution Systems, Engineering & Maintenance, Solar PV & Energy Storage Systems)
- Energy Retail Executive
- Project Financing Executive

Jed Ong
Class of 2020
Technical Support Engineer at National Instruments

Loh Jia Wen
Class of 2022
Electrical Engineer at PSA Global

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf.**

For students with other qualifications please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with colour vision deficiency, severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Diploma in Electrical Engineering, visit **www.np.edu.sg/ee**

Get latest updates on course

N44

Diploma in

Electronic & Computer Engineering

- One of the **most established** electronic and computer engineering diplomas in Singapore
- Gain **industry certification** such as AWS Certified Cloud Practitioner
- Choose one of four specialisations to hone your skills - **Artificial Intelligence of Things (AIoT)**, **Microelectronics**, **Operational Technology Cybersecurity** New, or **Space Technology** New
- Unlock new opportunities for your career and further studies with a **Second Major in Business**

WHAT THE COURSE IS ABOUT

Who can live without electronics and computers today? From our smart phones and laptops, to the vehicles that we travel in daily, play a part in transforming the way we work and play with the Diploma in Electronic & Computer Engineering (ECE).

Build a Strong Foundation
ECE will introduce you to the important fields of electronic engineering, as well as computer hardware and software. You will develop essential core knowledge in electronic circuit & system design, software programming and communication technologies.

Gain Leading-edge Skills
You will be exposed to semiconductor manufacturing, and the latest digital technologies of Industry 4.0, such as Artificial Intelligence & Machine Learning, Internet of Things, Data Analytics, Cloud Computing, and Networking & Security.

Double Major
Get an extra edge by pursuing a Second Major in Business*, delivered by NP's esteemed School of Business & Accountancy. This dual qualification will unlock new opportunities for your career and further studies.

Industry-relevant Learning
Get career-ready with our industry-driven curriculum, co-developed with key partners such as Amazon Web Services, Cisco Systems, National Instruments and United Microelectronics Corporation. In addition, gain opportunities to top up your knowledge and skills to attain relevant industry certifications such as AWS Certified Cloud Practitioner through vacation bootcamps.

Put your knowledge to the test with a six-month internship with industry leaders such as ST Engineering and GlobalFoundries, or an industry-sponsored Final-Year Project. Plus, undertake local or overseas study trips to widen your exposure to the exciting world of engineering!

Alternatively, gain real-world experience, expand your professional network, and build skills for your future with the Industry Immersion Pathway, which offers a choice between a one-year internship or project.

*For selected students.

Specialise in Emerging Areas
In your final year, you can choose from the following:

- **Artificial Intelligence of Things:** Learn how AI is applied in electronics and the Internet of Things (IoT) to develop smarter devices and systems with optimised features and functionalities.
- **Microelectronics:** Gain hands-on experience in the manufacturing of integrated circuits, covering both front- and back-end semiconductor fabrication, quality control, reliability, and integrated circuit testing.
- **Cross-Disciplinary Specialisations** New
  Get future-ready by acquiring transferable skills in niche engineering fields! You can choose to specialise in fields by specialising in **Operational Technology Cybersecurity** or **Space Technology**. Refer to Page 5 for more information.

INNOVATIVE ROBOT SOLUTIONS

Alongside students from the Automation & Mechatronic Systems* course, ECE students represented NP at the 29th Tsuyama Robot Contest (Robocon) in Japan. Out of 23 international teams, they received the Best Idea Award for their innovative robot designed to strike pucks within specific scoring zones.

*now renamed Mechatronics & Robotics

OVERVIEW OF YOUR ECE JOURNEY

Key focus areas

Electronic Circuits & Systems
- Analogue & Digital Circuits (Circuit Design & Analysis)
- Electronic System-Level Design

Computer Programming
- Object-Oriented Programming
- Microcontroller, Interfacing & Embedded Programming

Internet of Things
- Artificial Intelligence & Machine Learning
- Data Analytics
- Cloud & Database
- Networking & Security

Microelectronics
- Semiconductor Manufacturing
- IC Testing
- Quality & Reliability

Customise your learning

Diploma Specialisations

- Artificial Intelligence of Things
- Microelectronics

OR

Cross-Disciplinary Specialisations

- Operational Technology Cybersecurity
- Space Technology

Six-month Final-Year Project **OR** Internship

OR

Broaden your learning with a Second Major in Business*

Six-month Final-Year Project **OR** Internship

OR

One-year Industry Immersion Pathway

*For selected students.

WHAT YOU WILL LEARN

YEAR 1
- AC Circuits
- Analogue Electronics
- Digital Fundamentals
- Engineering Mathematics 1 & 2
- Electrical Engineering Fundamentals
- Fundamental Electronic & Electrical Skills
- Mechanical Engineering Fundamentals
- Programming
- Career & Engineering Professional Preparation
- Confident Communication: Find Your Voice (VOICE)^
- Innovation Made Possible^
- Health & Wellness^
- English Language Express^*

YEAR 2
- Applied Analogue Electronics*
- Applied Digital Electronics
- Communication Systems*
- Data Analytics
- Engineering & Sustainability
- Internet of Things
- Microcontroller & Interfacing
- Network Fundamentals
- Object-Oriented Programming
- Servers & Cloud Fundamentals
- World Issues: A Singapore Perspective^

Second Major in Business
- Economics
- Finance & Accounting for Business
- Marketing
- Global Business

YEAR 3
- Final-Year Project OR Six-month Internship (Local/ Overseas)
- Project ID: Connecting the Dots^

Choose one of these specialisations:

Artificial Intelligence of Things Specialisation
- AI Applications
- Capstone Project
- IoT & Cloud Security
- Machine Learning with Python

Microelectronics Specialisation
- Capstone Project
- IC Testing, Assembly & Packaging
- Quality & Reliability
- Semiconductor Manufacturing

Operational Technology Cybersecurity Specialisation
- AI Applications
- Cyber Governance, Risk & Compliance
- Fundamentals of OT Cybersecurity
- Industrial Automation

Space Technology Specialisation
- AI Applications
- Capstone Project: CanSatellite
- Satellite Systems Design and Engineering

Or opt for one of the following:

Industry Immersion Pathway
- One-year Internship OR One-year Project

Second Major in Business
- Foundations of Law
- Corporate Finance
- Develop a Business
- People & Culture
- Integrated Marketing Communication

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students.

*Not applicable to students taking Second Major in Business

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

This diploma is recognised by leading universities both locally and abroad. You may be granted advanced standing or module exemptions when applying for related degree programmes at local universities and overseas in countries such as Australia and the United Kingdom.

Nicholas Lee
Class of 2021
Pursuing a Bachelor of Engineering in Computer Science at NTU

Christopher Chia
Class of 2022
Pursuing an undergraduate degree with a major in Engineering Product Development under a bond-free SUTD scholarship

Jonathon Chu
Class of 2023
Pursuing a degree in Computer Science under the NTU-University Scholars Programme

CAREER

Electronics is one of the world's largest industries – that means you will enjoy many diverse and exciting career opportunities upon graduation. These include:

- Associate Embedded Systems Engineer
- Assistant IoT Solutions Engineer
- Assistant Equipment Engineer
- Assistant Process Engineer
- Assistant Product Engineer
- Assistant Quality Engineer
- Assistant Facility Engineer
- Assistant Integration Engineer

Chong Fang Qi
Class of 2015
Software Engineer at Autodesk Asia Pte Ltd

Justin Ong
Class of 2017
Embedded Systems Engineer at Aliena

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf**.

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with colour vision deficiency, severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Diploma in Electronic & Computer Engineering, visit **www.np.edu.sg/ece**

Get latest updates on course

N41

Mechanical Engineering

- A broad-based curriculum that prepares you for a **wide range of exciting careers** in precision engineering, public transport, energy and chemicals, engineering services and more
- Ride the Industry 4.0 wave with **in-demand digital skills** like advanced modelling, industrial automation & robotics and predictive maintenance & analytics
- **New sustainability focus** to prepare you to help companies optimise decarbonisation efforts
- Explore a **Cross-Disciplinary Specialisation** New or deepen your learning by specialising in **Automation Design Engineering** or **Mobility Design Engineering**

WHAT THE COURSE IS ABOUT

Mechanical engineering touches virtually every aspect of modern life. Imagine an autonomous car powered by renewable energy and a robotic exoskeleton that can help seniors improve their range of motion.

With the Diploma in Mechanical Engineering (ME) giving you a head start in building such sleek technology, you will be well positioned to excel in fields such as precision engineering, environment and energy, facilities and infrastructure, and transportation.

Get Equipped with In-demand Skills
In your first year, you will learn the fundamentals of mechanical engineering with a focus on materials and design skills through modules such as Thermofluids, Materials & Manufacturing Technology and Mechanical Engineering Fundamentals. Then deepen your understanding with modules such as Engineering System Design and Mechanics of Machines & Materials in your second year.

You will also gain insights into the latest technologies that are reshaping the industry, such as Artificial Intelligence (AI), robotics and the Internet of Things (IoT). Apply your skills by creating innovative clean energy solutions, developing new materials and processes, as well as designing and manufacturing products ranging from consumer products to medical devices.

Specialise in Emerging Areas
In your final year, choose from the following options:

- **Automation Design Engineering**
  Focused on system design and integration, this specialisation equips you with design, manufacturing, and maintenance skills for advanced manufacturing. These skills are applicable across various industries, preparing you for roles in design, assembly, production, and maintenance.

- **Mobility Design Engineering**
  Through modules such as Mechanical Drives System, Electrical Technology System, and Mobility System Design & Integration, you will develop electro-mechanical mobility skills that are in high demand within the mobility technology sector.

- **Cross-Disciplinary Specialisations** New
  Get future-ready by acquiring transferable skills in niche engineering fields! Choose to specialise in **AI for Engineers, Operational Technology Cybersecurity** or **Space Technology**. Refer to Page 5 for more information.

Industry-relevant Learning
At ME, you will always be at the forefront of the latest technologies by learning and collaborating on industry-relevant projects with our partners such as Akribis, HOPE Technik, Autodesk, Grundfos, Carrier, and SMC Corporation.

You will also work on a Final-Year Project to design and develop a prototype with practical, real-world applications.

To complete your learning journey, choose between a six-month internship with leading organisations such as ST Engineering, Micron Technology, and TÜV SÜD PSB, or the Industry Immersion Pathway. This pathway offers the option of a one-year internship or a one-year project, giving you the chance to build valuable skills and industry knowledge.

PASSION FOR CARS

"I was fortunate enough to work on a group-based Final-Year Project that focused on automotive technologies and motorsport. The project gave us the opportunity to build energy-efficient cars and represent NP to compete at the 2019 Shell Eco-Marathon Asia competition where we came in second place! This success inspired me to continue my journey in Mechanical Engineering at NTU!"

Justin Wong
Class of 2019

Justin (far right) received a Master of Science in Race Car Aerodynamics from the University of Southampton. He is currently a junior aerodynamicist with the Visa Cash App Formula One Team.

OVERVIEW OF YOUR ME JOURNEY

YEAR 1

Build a strong foundation in core skills

Engineering Fundamentals
(e.g. Engineering Drawing Fundamentals, Programming, Materials & Manufacturing Technology, Engineering Mathematics)

YEAR 2

Enhance your real-world learning

- Work on real-world projects with industry partners such as Akribis, HOPE Technik, Autodesk and PSA Singapore
- Design and develop a new integrated system for real-world applications

YEAR 3

Customise your learning

Diploma Specialisations

- Automation Design Engineering
- Mobility Design Engineering

OR

Cross-Disciplinary Specialisations

- AI for Engineers
- Operational Technology Cybersecurity
- Space Technology

Six-month Final-Year Project **OR** Internship

OR

One-year Industry Immersion Pathway

WHAT YOU WILL LEARN

YEAR 1
- Engineering Drawing Fundamentals
- Engineering Mathematics 1 & 2
- Electrical Engineering Fundamentals
- Materials & Manufacturing Technology
- Mechanical Engineering Fundamentals
- Programming
- Strength of Materials
- Thermofluids
- Career & Engineering Professional Preparation
- Confident Communication: Find Your Voice (VOICE)^
- Innovation Made Possible^
- Health & Wellness^
- English Language Express^*

YEAR 2
- Advanced Materials & Manufacturing Technologies
- Applied Mechanics
- Applied Thermofluids
- Computer-Aided Design & Analysis
- Engineering & Sustainability
- Engineering System Design
- Industrial Automation
- Project Management
- Mechanics of Machines & Materials
- Quality Systems & Analytics
- World Issues: A Singapore Perspective^

YEAR 3
- Capstone Project#
- Six-month Internship (Local/ Overseas) OR Final Year Project
- Project ID: Connecting the Dots^

Electives
- Mechanical Drives System
- Design for Manufacturing & Assembly

Choose one of these specialisations:

Automation Design Engineering Specialisation
- Automation System Design & Integration
- Design for Manufacturing & Assembly
- Smart Sensors & Actuators

Mobility Design Engineering Specialisation
- Electrical Technology System
- Mechanical Drives System
- Mobility System Design & Integration

AI For Engineers Specialisation
- Fundamentals of Machine Learning
- Fundamentals of Neural Networks and Deep Learning
- Integrated Projects in Machine Learning
- 1 Elective Module

Operational Technology Cybersecurity Specialisation
- Advanced Automation System
- Cyber Governance, Risk & Compliance
- Fundamentals of OT Cybersecurity
- 1 Elective Module

Space Technology Specialisation
- Capstone Project: CanSatellite
- Satellite Systems Design and Engineering
- 1 Elective Module

Or opt for the Industry Immersion Pathway
- One-year Internship OR One-year Project

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students.

#Applicable to students specialising in Automation Design Engineering and Mobility Design Engineering only

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

You may be granted advanced standing in related engineering courses at:

Singapore
- Nanyang Technological University
- National University of Singapore
- Singapore Institute of Technology-University of Glasgow

Australia
- University of New South Wales
- University of Melbourne
- University of Sydney
- RMIT University
- Monash University

United Kingdom
- University of Edinburgh
- University of Birmingham
- University of London
- Loughborough University
- Newcastle University

Cheng Shi Hui
Class of 2020
Pursuing a Masters in Biomaterials at NTU

CAREER

You can look forward to pursuing roles such as:

- Assembly Engineer
- Automation Assistant Engineer
- Automotive Engineer
- Facility Engineer
- Manufacturing Engineer
- Mechanical Engineer
- Mobility Design Engineer
- Precision Engineer
- Product Engineer
- Project Engineer
- Process Engineer
- Quality Assurance Engineer
- Sales Engineer

Ivan Cheong
Class of 2018
Chief Business Development Officer of FATFreq, a start-up that specialises in in-ear monitors

Kick-start your military career with the SAF Land Systems through the MINDEF/SAF Work-Learn Scheme! Enlist one year earlier than your peers and have your SAF military training and service count towards the fulfilment of your final-year internship requirements.

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf**.

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Diploma in Mechanical Engineering, visit **www.np.edu.sg/me**

Get latest updates on course

N50

Diploma in
Mechatronics & Robotics

- A broad-based curriculum with a strong focus on **autonomous mobile and collaborative robotics**
- **Acquire skills in emerging technologies** such as Augmented Reality, Robot Operating System, Computer Vision in AI and Industrial IoT for exciting career opportunities in **robotics engineering and automation**!
- Deepen your learning by specialising in **Autonomous Systems**, **Automation & Industrial Cybersecurity**, **AI for Engineering** New or **Space Technology** New
- Unlock new opportunities for your career and further studies by pursuing a **Second Major in Business**

WHAT THE COURSE IS ABOUT

Robots are changing our daily lives – imagine stepping out of your smart home, taking a self-driving vehicle to your favourite restaurant, and getting served by a robot waiter! The field of robotics and automation is steadily growing and finding its way into every home, company and industry. If you want to engineer the next generation of robots and smart machines, the Diploma in Mechatronics & Robotics (MR) is your ideal choice.

With our broad-based curriculum, you will learn to use emerging technologies in robotics and automation, such as augmented reality, computer vision and Industrial Internet of Things, to develop high-tech solutions for consumer products and industrial applications. This will give you an edge when you pursue exciting careers in growing fields such as service robotics, autonomous driving technologies and industrial automation and applications.

A Strong Engineering Foundation
In the first two years, you will build a strong foundation in the various disciplines of engineering – electrical, electronics, mechanical and programming. You will also learn practical skills in computer-aided design, applications of artificial intelligence, and how to develop robotic applications using the Robot Operating System (ROS).

Specialise in Emerging Areas
In your final year, you can choose to specialise in one of four areas:

- **Autonomous Systems**
  Gain expertise in autonomous mobile robot development, collaborative robot (cobot) programming, and autonomous vehicle deployment. This specialisation equips you with the skills needed for a career as a robotics engineer.

- **Automation & Industrial Cybersecurity**
  Get a head start in programming mechatronics systems using industrial controllers, and learn how to secure industrial control systems by applying cybersecurity strategies and solutions.

- **Cross-Disciplinary Specialisations** New
  Get future-ready by acquiring transferable skills in niche engineering fields by specialising in **AI for Engineers** or **Space Technology**. Refer to Page 5 for more information.

Double Major
Get an extra edge by pursuing a Second Major in Business*, delivered by NP's esteemed School of Business & Accountancy. This dual qualification will unlock new opportunities for your career and further studies.

Industry-relevant Learning
With many modules co-developed and co-delivered with our industry partners such as Aveva, Fortinet, LKH Precicon, Omron Electronics, Siemens, Universal Robots, HOPE Technik, and MooVita, you will be prepared for the industry when you graduate. There are also opportunities to go on a six-month internship at companies such as PSA Singapore, LKH Precicon, A*STAR, Siemens and Omron Electronics.

Alternatively, you can opt for the Industry Immersion Pathway and embark on a one-year internship or one-year project to deepen your expertise.

Plus, gain hands-on experience at high-tech mobility solutions provider MooVita, situated right on campus!

WORLDSKILLS CHAMPIONS

Cedric Yau and **Alvin Ang** clinched Gold in the Mechatronics category at the 2025 WorldSkills ASEAN competition, by demonstrating their expertise in operating industrial equipment, programming automated control systems and designing user-interfaces for machine operation.

*For selected students.

OVERVIEW OF YOUR MR JOURNEY

Key focus areas

Mechatronic Engineering (e.g. Mechanics, Electrical & Electronic Technology, Programming)

Robotic Systems & Artificial Intelligence (e.g. Robot Operating System, Computer Vision in AI)

Automation Technologies (e.g. Programmable Logic Controllers, Industrial Internet of Things, Microcontrollers)

Customise your learning

Diploma Specialisations

- Autonomous Systems
- Automation & Industrial Cybersecurity

OR

Cross-Disciplinary Specialisations

- AI for Engineers
- Space Technology

Six-month Final-Year Project **OR** Internship

OR

Broaden your learning with a Second Major in Business*

Six-month Final-Year Project **OR** Internship

OR

One-year Industry Immersion Pathway

*For selected students.

WHAT YOU WILL LEARN

YEAR 1

- Electrical & Electronics Technology
- Electrical Engineering Fundamentals
- Engineering Drawing Fundamentals
- Engineering Mathematics 1 & 2
- Materials & Manufacturing Technology
- Mechanical Engineering Fundamentals
- Programming
- Thermofluids
- Career & Engineering Professional Preparation
- Confident Communication: Find Your Voice (VOICE)^
- English Language Express^*
- Health & Wellness^
- Innovation Made Possible^

YEAR 2

- Applied Mechanics
- Computer Aided System Design
- Computer Vision in Artificial Intelligence
- Engineering & Sustainability
- Industrial Automation
- Mechatronic Drive Systems*
- Microcontroller & System
- Network Fundamentals*
- Robot Operating System
- Strength of Materials
- World Issues: A Singapore Perspective^

Second Major in Business

- Economics
- Finance & Accounting for Business
- Marketing
- Global Business

YEAR 3

- Systems Modelling & Control*
- Final-Year Project OR Six-month Internship (Local/Overseas)
- Project ID: Connecting the Dots^

Choose one of these specialisations:

Autonomous Systems Specialisation

- Advanced Robotic Systems & Applications
- Autonomous Platform Systems
- Autonomous System Deployment

Automation & Industrial Cybersecurity Specialisation

- Advanced Automation System
- Augmented Reality & Robotics Systems
- Fundamentals of OT Cybersecurity

AI For Engineers Specialisation

- Fundamentals of Machine Learning
- Fundamentals of Neural Networks and Deep Learning
- Integrated Projects in Machine Learning

Space Technology Specialisation

- Capstone Project: CanSatellite
- Satellite Systems Design and Engineering

Or opt for one of the following:

Industry Immersion Pathway

- One-year Internship OR One-year Project

Second Major in Business

- Foundations of Law
- Corporate Finance
- Develop a Business
- People & Culture
- Integrated Marketing Communication

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students.

* Not applicable to students taking Second Major in Business

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

You will be well prepared for further studies in mechanical, electrical or electronic engineering at both local and overseas universities. You may even be granted advanced standing in related engineering courses at:

Singapore
- Nanyang Technological University
- National University of Singapore
- Singapore Institute of Technology-University of Glasgow

Australia
- Monash University
- University of New South Wales

United Kingdom
- University of Manchester
- University of Sheffield

Tan Xin Yong
Class of 2022
The recipient of the NTU Dean's Award is pursuing a degree in Bachelor of Engineering in Electrical & Electronic Engineering

CAREER

You will be well sought-after in jobs that involve the design, development and manufacturing of intelligent products and systems, such as:

- Automation Engineer
- Application Engineer
- Equipment Engineer
- Facility Engineer
- Process Engineer
- Product Engineer
- Production Engineer
- Quality Assurance Engineer
- Robotics Engineer
- System Integrator

Clement Chen
Class of 2012
Design Engineer at Dyson Singapore

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf**.

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with colour vision deficiency, severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Diploma in Mechatronics & Robotics, visit **www.np.edu.sg/mr**

Get latest updates on course

N42

Offshore & Sustainable Engineering

- A unique diploma that covers naval architecture with a focus on **sustainability**, **decarbonisation** and **renewable energy** that prepares you for careers in the marine and offshore engineering sector, and exciting opportunities in clean and renewable energy such as offshore wind
- Learn about essential digital skills used in **AI and data analytics** with a choice of specialisation in **AI for Engineers** New or **Operational Technology Cybersecurity** New
- Apply for the **prestigious MaritimeONE Scholarship** that covers tuition fees and allowances
- **Enjoy advanced standing** for the Naval Architecture & Marine Engineering degree with SIT-Newcastle University and related degrees with local or overseas universities

WHAT THE COURSE IS ABOUT

With the growing importance of sustainability, the marine and offshore sector presents new and exciting career opportunities! Set sail on your 'green' adventure with our Diploma in Offshore & Sustainable Engineering (OSE).

You will get trained in naval architecture and marine engineering, with a green focus on sustainability, decarbonisation and renewable energy. Through OSE, you will gain expertise in designing and building offshore vessels and structures. By delving into crucial areas of green technology – such as low-carbon and green-fuelled systems, as well as hydrogen infrastructure – you will gain the knowledge needed for careers in the sustainable engineering sector. With offshore wind identified as a key sector for sustainable energy growth in Singapore and Asia, OSE will give you a head start in this emerging field.

Cross-Disciplinary Specialisations New
Take on a Cross-Disciplinary Specialisation to get future-ready! You'll acquire transferable skills in niche engineering fields by specialising in **AI for Engineers** or **Operational Technology Cybersecurity**. Refer to Page 5 for more information.

Work on Industry-based Projects
Our strong emphasis on industry-based projects will give you an edge in creating innovative solutions for using clean energy, developing new materials and processes, as well as designing and building marine vessels and offshore structures.

In your final year, you may undertake a capstone project focusing on conventional energy, new energy, renewables, or decarbonisation solutions. There will be opportunities for you to work with students from other engineering disciplines to solve real-world problems related to the marine and offshore industry.

Local and Overseas Industry Exposure
Broaden your experience with the Industry Immersion Pathway, which offers a one-year internship for in-depth, hands-on exposure to industry practices. Alternatively, choose a six-month internship with leading companies such as Seatrium Limited, Hanwha Offshore Singapore and PSA Marine. There are also opportunities for you to go on overseas trips to sharpen your global perspective!

What's more, our industry partners offer attractive scholarships covering tuition fees and allowances for your diploma.

OVERVIEW OF YOUR OSE JOURNEY

Key focus areas

NAVAL ARCHITECTURE
- Geometry & Buoyancy
- Hydrostatics and Stability
- Structure & Resistance

MARINE ENGINEERING
- Marine Propulsion & Systems
- Maritime Decarbonisation

SUSTAINABLE ENGINEERING
- Engineering & Sustainability
- Offshore Renewables

Your learning experience

- Learn how to design marine vessels and offshore structures as you hone AI-proficiency
- Opportunity to work on multidisciplinary projects in conventional energy, new energy, renewables or decarbonisation solutions

Customise your learning

Choose from 2 Cross-Disciplinary Specialisations

- AI for Engineers
- Operational Technology Cybersecurity

Six-month Final-Year Project **OR** Internship

OR

Capstone Project

Six-month Final-Year Project **OR** Internship

OR

One-year Industry Immersion Pathway

WHAT YOU WILL LEARN

YEAR 1
- Engineering Drafting
- Engineering Mathematics 1 & 2
- Electrical Engineering Fundamentals
- Geometry & Buoyancy
- Mechanical Engineering Fundamentals
- Programming
- Thermofluids
- Career & Engineering Professional Preparation
- Health & Wellness^
- Innovation Made Possible^
- Confident Communication: Find Your Voice (VOICE)^
- English Language Express^*

YEAR 2
- Engineering & Sustainability
- Hydrostatics & Stability
- Marine Engineering Systems
- Marine Propulsion Systems
- Maritime Decarbonisation
- Offshore Topside Systems
- Offshore Wind
- Project Management
- Strength of Materials
- Structure & Resistance
- World Issues: A Singapore Perspective^

YEAR 3
- Engineering Modelling
- Final-Year Project OR Six-month Internship
- Project ID: Connecting the Dots^

Choose one of these specialisations:

AI for Engineers Specialisation
- Fundamentals of Machine Learning
- Fundamentals of Neural Networks and Deep Learning
- Integrated Projects in Machine Learning

Operational Technology Cybersecurity Specialisation
- Cyber Governance, Risk & Compliance
- Fundamentals of OT Cybersecurity
- Industrial Automation

Or opt for any of the following:

Capstone Project
- Capstone Project
- Marine Production Technology

Industry Immersion Pathway
- One-year Internship OR One-year Project

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^* For selected students only.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

Accredited by the Institute of Marine Engineering Science & Technology (UK), this diploma gives you the opportunity to improve your prospects by pursuing a related degree programme at a local or an overseas university. You can also enjoy advanced standing at these universities:

Singapore
- Nanyang Technological University
- National University of Singapore

Australia
- University of Sydney
- University of Tasmania

United Kingdom
- Newcastle University
- University of Glasgow
- University of Strathclyde

Together with Newcastle University, the Singapore Institute of Technology offers you the chance to pursue the prestigious Bachelor of Engineering with Honours in Naval Architecture and Marine Engineering.

Zenn Lim
Class of 2024
Pursuing a degree in Naval Architecture and Marine Engineering at SIT

CAREER

Pursue a career in the design, survey, production, safety, and research and development areas of the marine and offshore industries. You can look forward to pursuing careers in these job roles:

- Assistant Design Engineer
- Assistant Production Engineer
- Assistant Quality Assurance Engineer
- Assistant Quality Control Engineer
- Assistant Project Engineer

Goh Cai Qi
Class of 2019
Project Engineer at Hanwha Offshore Singapore

Chan Shu Fei
Class of 2019
Engineer at Seatrium Limited

Entry Requirements

Aggregate Type ELR2B2-C
To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject	'O' level Grade
English Language	1-7
Additional Mathematics/Mathematics	1-6
Any one of the following subjects:	1-6
Biology	
Biotechnology	
Chemistry	
Computing/Computer Studies	
Design & Technology	
Electronics/Fundamentals of Electronics	
Physics	
Science (Chemistry, Biology)	
Science (Physics, Biology)	
Science (Physics, Chemistry)	

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf**.

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

Candidates with severe vision deficiency, profound hearing deficiency, uncontrolled epilepsy and/or severe physical impairments may encounter difficulties meeting the course requirements and expectations.

CONTACT US
For the most up-to-date information on NP's Diploma in Offshore & Sustainable Engineering, visit **www.np.edu.sg/ose**

Our Graduates with that Something XTRA

BUSINESS WHIZ

Frank graduated from NTU with a double degree in business and computer science under the NTU College Scholarship. He is the CEO of Ty Innovations Pte Ltd.

FRANK QUEK
Electronic & Computer Engineering graduate, Class of 2009

LEADING SMARTER HEALTHCARE

Zhe Zhi holds a bioengineering degree from NTU and is currently an Operations Manager for Customer Services at Siemens Healthineers.

HUI ZHE ZHI
Biomedical Engineering graduate, Class of 2011

TAKING AI TO NEW HEIGHTS

Zenas graduated from Cornell University with a Master of Engineering in Information Science, and is currently working as a Senior AI Product Manager at Boston Consulting Group.

ZENAS LIM
Engineering Science graduate, Class of 2015

ROBOTICS EXPERT

Benjamin graduated from University College London with a Master of Science in Robotics and Computation. He is currently a lead robotics software engineer at Dyson Singapore.

BENJAMIN TAN
Automation & Mechatronic Systems* graduate, Class of 2015

*Renamed the Diploma in Mechatronics & Robotics

DATA SCIENTIST

Pavatharani graduated from NTU's Renaissance Engineering Programme with a Bachelor of Aerospace Engineering and Master of Science in Technology Management. She is working as a senior data scientist at Visa.

PAVATHARANI SENTHIL KUMAR
Aerospace Technology* graduate, Class of 2016

*Renamed the Diploma in Aerospace Engineering

ENGINEER ON THE MOVE

Vhora graduated with a mechanical engineering degree from NTU and is currently working as a project engineer at LTA.

VHORA SHRAYANS SURESH
Mechanical Engineering graduate, Class of 2016

ELECTRICAL SPECIALIST

A recipient of the Singapore-Industry Scholarship, Jin Li graduated from NUS with a degree in Electrical Engineering. She is an electrical specialist with HTX.

TENG JIN LI
Electrical Engineering graduate, Class of 2016

CHARTING AN OFFSHORE CAREER

Cai Qi graduated from NTU with a degree in mechanical engineering and is currently a project engineer with Hanwha Offshore Singapore.

GOH CAI QI
Marine & Offshore Technology graduate*, Class of 2019

*Renamed the Diploma in Offshore & Sustainable Engineering

ngee ann polytechnic

535 Clementi Road Singapore 599489
Admissions Hotline: 6463 1233
askNP@np.edu.sg

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