

soe

School of
Engineering

NGEE ANN POLY

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



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SoE

Engineering with that Something Xtra!

From industry induction to mentorship and overseas exposure, you'll find engineering with that something xtra at Ngee Ann Polytechnic's School of Engineering (SoE). With strong industry ties and cutting-edge robotics research, you can shape your learning journey by immersing yourself in a year-long industry programme, earning university credits while in polytechnic, or pursuing a double major. 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) **Revamped**

- Gain exposure to various engineering fields before making an informed choice
- After the first semester, choose from one of our 8 engineering diplomas

Engineering Science (N93)

- Designed for university-bound students with a strong passion for applied science
- Develop skills in emerging technologies, including artificial intelligence and machine learning
- Choose to specialise in:
 - AI for Autonomous Systems
 - Data Analytics & Security

Aerospace Engineering (N65)

- Drive the future of aviation with this course, gaining cutting-edge skills in data analytics, artificial intelligence, and machine learning
- Choose from two specialisations:
 - Avionics
 - Mechanical

Biomedical Engineering (N60)

- 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

Electrical Engineering (N43) **Revamped**

- Power the future with Singapore's only electrical engineering diploma focused on sustainability and the green economy
- Customise your learning with a wide range of electives, capstone projects, the one-year Industry Immersion Pathway, or specialisations in Smart Energy System or Sustainable Power Engineering
- Be among the first poly students to pursue a Second Major in Business **New**

Electronic & Computer Engineering (N44) **Revamped**

- Shape the future of computer systems and build a strong foundation in electronics, circuits, software programming, computer networks and other cutting-edge technologies
- Choose to specialise in Artificial Intelligence of Things or Microelectronics, or deepen your real-world experience through the one-year Industry Immersion Pathway
- Be among the first poly students to pursue a Second Major in Business **New**

Mechanical Engineering (N41)

- Broad-based curriculum focused on sustainability, preparing you for diverse careers in precision engineering, energy and chemicals, engineering services, and more
- Specialise in one of two areas:
 - Automation Design Engineering
 - Mobility Design Engineering

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 or Automation & Industrial Cybersecurity, or deepen your real-world experience through the one-year Industry Immersion Pathway
- Be among the first poly students to pursue a Second Major in Business **New**

Offshore & Sustainable Engineering (N42) **Revamped**

- 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

What Industry Says

"As the industrial robotics industry grows, Bosch Rexroth is proud to partner with NP to co-develop robotics courses covering Industry 4.0 concepts. We're also collaborating with the Mechatronics & Robotics diploma on curriculum and internships to advance automation and robotics in Advanced Manufacturing."

PETER PEH
Centre Director
Bosch Rexroth Regional Training Centre

"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
Senior Global Marketing Director
Commercial Buildings Services
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 countries such as China, Vietnam, and Cambodia.



Expertise In Robotics

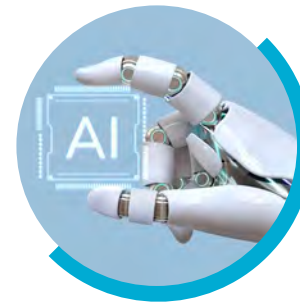
Acquire valuable skills in emerging technologies such as robotics, autonomous systems, artificial intelligence and data analytics at NP's Robotics Research & Innovation Centre.



Sustainability Focused

With our new on-campus green energy infrastructure, there's no better place to acquire the skills to seize opportunities in the growing renewable energy field! Experiment with sustainable energy solutions at synergy.lab and gain hands-on experience in managing a solar farm and EV charging infrastructure.

Own Your Learning



Future-ready Specialisations

Choose from a variety of specialisation options that align with emerging industry needs, such as AI for Autonomous Systems, Microelectronics, and Sustainable Power Engineering.



Your University Advantage

Start your uni studies ahead of your peers, thanks to the University Pathway Programmes with NUS and SUTD! Both pathways let you earn credits that count towards your future degree with either of two prestigious unis, all while studying at NP!



Real-world Ready

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.

Strong Industry Links

Our strong links with leading organisations offer exciting opportunities for learning and talent development.



Double Major Programme

Be among the first poly students to pursue a Second Major in Business. Gain an edge with this dual qualification, which will unlock new opportunities for your career and further studies.

*For selected students only



N71

Common Engineering Programme Revamped



Get latest updates on course

Pair Your Diploma with THAT SOMETHING XTRA

Take 1 or 2 Learning Units in an area that piques your interest. Or complete 3 Learning Units to get a Minor.



Because you get to:

- ▶ Try out something interesting.
- ▶ Gain additional skills outside of your course.
- ▶ Graduate with Xtra qualifications: Diploma + Minor.
- ▶ Take charge of your own learning and enjoy the journey.

The choice is yours. Our **Personalised Learning Pathway (PLP)** lets you choose what you'd like to learn from 4 different pathways and more than 50 Learning Units (LUs).

Mix and match your LUs or take up 3 specific LUs to earn a Minor. Go on an overseas trip or attend a masterclass. Discover fun, freedom and fulfillment when you personalise your learning with PLP!

To check out the wide range of interesting LUs, visit www.np.edu.sg/plp or scan the QR code here!



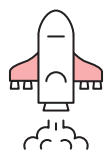
Personalise Your Learning with 4 Exciting Pathways & 12 Minors



PROFESSIONAL SKILLS PATHWAY

Minor In

- ▶ Applied Psychology
- ▶ Cybersecurity
- ▶ Data Analytics & AI
- ▶ Social Media Marketing
- ▶ User Experience Design
- ▶ Robotics & Innovation New



ENTREPRENEURSHIP PATHWAY

Minor In

- ▶ Entrepreneurship



GLOBAL READINESS PATHWAY

Minor In

- ▶ Foreign Languages
- ▶ Global Readiness



SOCIAL LEADERSHIP PATHWAY

Minor In

- ▶ Sustainable Care New
- ▶ Environmental Sustainability
- ▶ Social Leadership



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

WHAT THE COURSE IS ABOUT

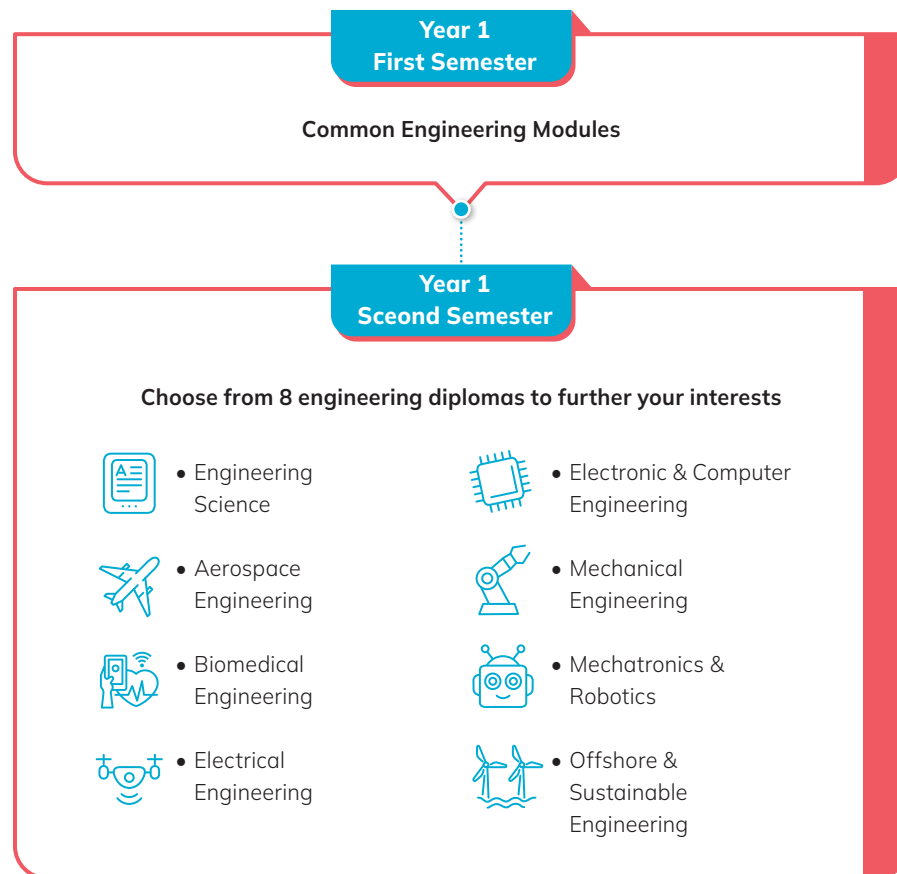
If you are keen on engineering but unsure which course suits you, the Common Engineering Programme (CEP) may be the perfect fit. Through CEP, you will gain exposure to different engineering domains, helping you make a more informed course choice.

In your first semester, you will experience our unique Induction Programme, which includes learning journeys, the Diploma Exposure Programme, industry visits, dialogues, and career advice to help you in course selection.

You will also 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!

After your first semester, you can choose from one of our eight engineering diplomas.

OVERVIEW OF YOUR CEP JOURNEY



WHAT YOU WILL LEARN



YEAR 1

- Engineering Mathematics 1
- Electrical Engineering Fundamentals
- Mechanical Engineering Fundamentals
- Programming
- Career & Engineering Professional Preparation
- 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 (pg 11)
- Aerospace Engineering (pg 17)
- Biomedical Engineering (pg 22)
- Electrical Engineering (pg 27)
- Electronic & Computer Engineering (pg 32)
- Mechanical Engineering (pg 37)
- Mechatronics & Robotics (pg 42)
- Offshore & Sustainable Engineering (pg 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 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

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

CAREER

Refer to the Career section on the respective diploma pages.

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 Common Engineering Programme, log on to www.np.edu.sg/cep

N93

Diploma in Engineering Science



Get latest updates on course



- ▶ Tailor-made for university-bound students with a **strong passion in applied science**, this unique engineering course has a strong focus on **mathematics, physics and computing**
- ▶ Acquire in-demand skills for the future economy by specialising in either **AI for Autonomous Systems** or **Data Analytics & Security**
- ▶ Develop valuable **applied R&D** experience at local universities and research institutes that will build your expertise and network
- ▶ Opportunities to secure **prestigious scholarships** from PSC, A*STAR 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, electrical, electronic and mechanical engineering; as well as data analytics.

Choose from Exciting Pathways

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.

Design Your Own Learning

In your third year, you can choose between two 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 AV 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.

Alternatively, you can opt for:

- **Industry Immersion Pathway New**

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.

- **University Pathway Programmes**

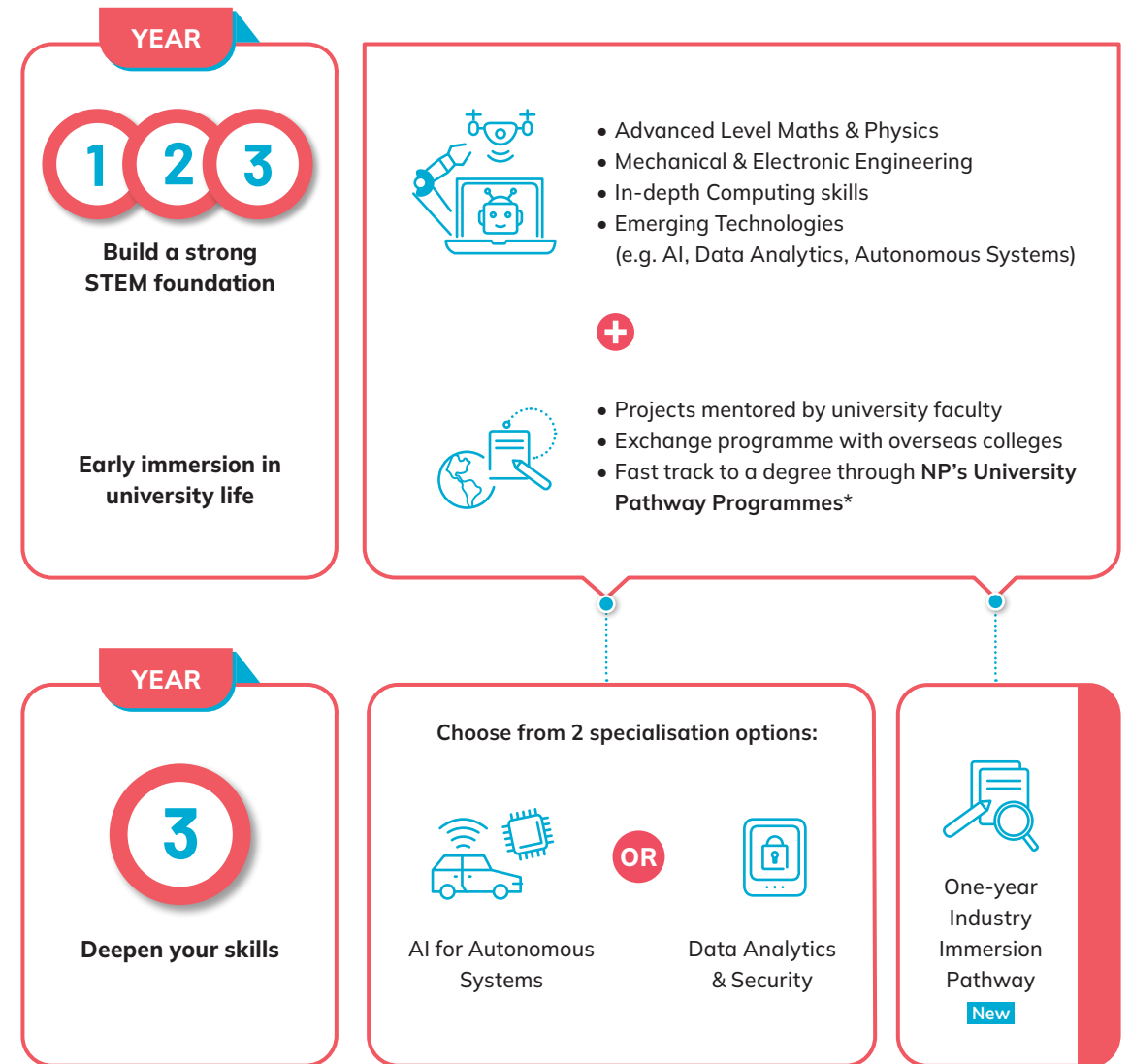
Start your uni studies ahead of your peers, thanks to the University Pathway Programmes with NUS and SUTD! Both pathways let you read uni modules, allowing you to earn credits that count towards your future degree with either of two prestigious unis!

Early University Exposure

A key highlight of ES is early exposure to and immersion in a university environment. As early as the 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.

OVERVIEW OF YOUR ES JOURNEY



*For selected students only

WHAT YOU WILL LEARN



YEAR 1

- AC Circuits
- Analogue Electronics
- Applied Mathematics 1
- Applied Mathematics 2
- Digital Fundamentals
- Electrical Engineering Fundamentals
- Fundamental Electronic & Electrical Skills
- Mechanical Engineering Fundamentals
- Programming
- Career & Engineering Professional Preparation
- Innovation Made Possible[^]
- 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[^]

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

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 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

Both NTU and NUS recognise ES for a wide range of their degree programmes. SUTD offers conditional admission for students in the NP-SUTD Pathway, along with module exemptions for ES graduates.

NUS provides early admission for selected ES students as early as Year 2 and allows them to take NUS modules during their studies at NP, earning additional credit exemptions. With your strong ES foundation, you can also apply for a variety of degree programmes at overseas universities.

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

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.



Gokul Nathan Class of 2016

Pursuing a PhD in Electrical and Computer Engineering at the University of Washington, USA. Co-founder and CEO of Guide Air LABS.



Kellie Sim Class of 2020

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



Reuben Thomas Class of 2021

Winner 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.



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.



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.

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.



Ekko Chua
Class of 2014

Consultant at International Energy Agency



Benjamin Chia
Class of 2014

Business partner at Enterprise Singapore's transformation office



Dr Lim Leh Woon
Class of 2014

Scientist in the Photonics team at A*STAR's Institute of Microelectronics



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

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 Engineering Science, log on to www.np.edu.sg/es

N65

Diploma in Aerospace Engineering



Get latest updates on course



- ▶ Gain **sought-after digital skills** in additive manufacturing, data analytics, artificial intelligence, machine learning, robotics and drones
- ▶ Choice of two specialisation options: **Avionics or Mechanical**
- ▶ 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

Growing up, were you fascinated with how a heavy machine can fly? Do you ever imagine yourself working on the next generation of aircraft? Then come on board the Diploma in Aerospace Engineering (AEG).

As global travel resumes, the demand for aerospace professionals in the industry is set to soar. 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

Gain insights into the aerospace industry through modules such as Aerial System Design & Integration, Aircraft Electrical & Instrumentation Systems, as well as Aircraft Data Communications & Networking. 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.

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

Specialise in Emerging Areas

In your second year, you can specialise in one of two areas:

- 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.

Strong Industry Links

Our strong links with the industry will provide you with real-world learning experiences. With some modules co-developed and co-delivered by our industry partners, you will gain valuable insights into the trends that are shaping the aerospace sector.

You will also get opportunities to apply your skills on projects to solve real-world problems. For example, you will even get to design and build an unmanned aerial vehicle!

In your final year, you'll have the option to either embark on a six-month local or overseas internship with companies like Collins Aerospace, Pratt & Whitney, ST Engineering, and Thales Solutions Asia, or choose the Industry Immersion Pathway for a year of hands-on experience. Both options provide real-world exposure, opportunities to build professional networks, and a strong head start in your career.

Students who are interested to get 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
 (e.g. Engineering Mathematics, Mechanical Engineering Fundamentals, Electrical Engineering Fundamentals)



Aerospace MRO
 (e.g. Digital MRO, Engine MRO, Engineering System & Design)



Digital Skills
 (e.g. data analytics, artificial intelligence and machine learning)



Deepen your skills through specialisations



Avionics



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



Six-month overseas/local internship OR One-year Industry Immersion Pathway

New

WHAT YOU WILL LEARN

YEAR 1

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

Avionics Specialisation

- AC Circuits
- Analogue Electronics
- Digital Fundamentals
- Fundamental Electronic & Electrical Skills

Mechanical Specialisation

- Thermofluids
- Electrical & Electronics Technology
- Materials & Manufacturing Technology
- Engineering Drawing Fundamentals

YEAR 2

- Aerospace Fundamentals
- Aerial System Design & Integration
- Engineering & Sustainability
- System Modelling & Control
- World Issues: A Singapore Perspective^

Avionics Specialisation

- Aircraft Data Communications & Networking
- Aircraft Material & Maintenance Practices
- Applied Analogue Electronics
- Applied Digital Electronics
- Avionics Maintenance Practices
- Object-oriented Programming

Mechanical Specialisation

- Advanced Thermofluids
- Aircraft Maintenance Practices
- Aircraft Structures & Materials
- Applied Mechanics
- Engineering System Design
- Strength of Materials



YEAR 3

- Digital Maintenance, Repair & Overhaul Application
- Final-year Project
- Six-month Internship
- Project ID: Connecting the Dots^

Avionics Specialisation

- Aircraft Navigation & Surveillance Systems
- Aircraft Electrical & Instrumentation Systems

Mechanical Specialisation

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

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

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.



Nick Chua
Class of 2020

Pursuing an Information Security degree at NUS



Choo Jing Yi
Class of 2021

Pursuing a Mechanical Engineering degree at NTU under the Nanyang Scholarship

CAREER

With Singapore as a leading aerospace MRO provider in Asia, demand for trained professionals is high. AEG is recognised by established aerospace organisations, giving you an edge in exploring careers such as:

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

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. You can also pursue skills-deepening programmes or the SkillsFuture Work-Study Post-Diploma Programme after graduation.



Denzel Lee
Class of 2015

Chief Technology Officer and co-founder of Datature Analytics



Ting Jia Lin
Class of 2017

Operations Leader at Eagle Services Asia Pte Ltd

ENTRY REQUIREMENTS

Aggregate Type ELR2B2-C

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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.

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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

N60

Diploma in Biomedical Engineering



Get latest updates on course



- ▶ The first poly diploma that bridges **engineering with life sciences** and **trains clinical engineering professionals**
- ▶ Acquire the skills to **design, develop and test medical devices** and competencies in **MedTech engineering** to seize opportunities in the fast-growing MedTech sector
- ▶ Go on **curated internships** and work on **industry projects** with leading MedTech companies and healthcare institutions such as ZOLL Medical and SingHealth
- ▶ Get a head start in gaining a prestigious degree with the **University Pathway Programmes with NUS and SUTD!**

WHAT THE COURSE IS ABOUT

Fascinated by how engineering and biology can benefit society? Or are you interested in helping medical professionals do their work better? If you're passionate about the MedTech field, then the Diploma in Biomedical Engineering (BME) is perfect for you.

This fast-growing field is responsible for the design 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 including the pacemaker and dialysis machine.

Jointly developed by Ngee Ann Polytechnic's School of Engineering and leading industry partners, BME gives you a firm grounding in research that could lead to the discovery and development of faster and more accurate 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 areas such as programming, electrical, electronic and mechanical engineering, cell and molecular biology, as well as human physiology.

You will also learn about MedTech engineering, and be equipped with knowledge of relevant quality assurance standards and 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.

You will also be exposed to emerging technologies like Artificial Intelligence and the Internet of Medical Things (IoMT), which are increasingly adopted for clinical applications.

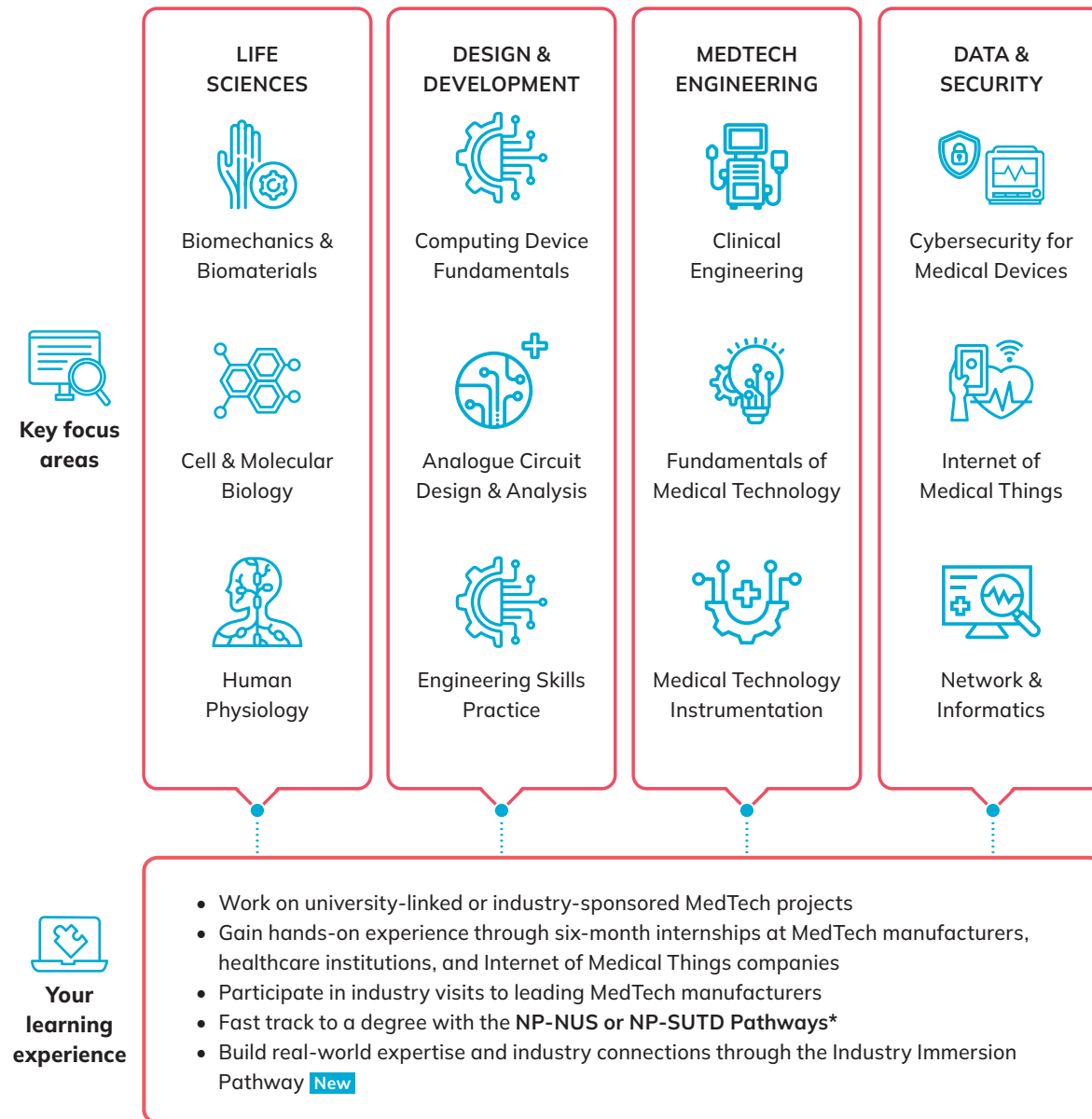
Industry-relevant Learning

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.

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 kickstart your career.

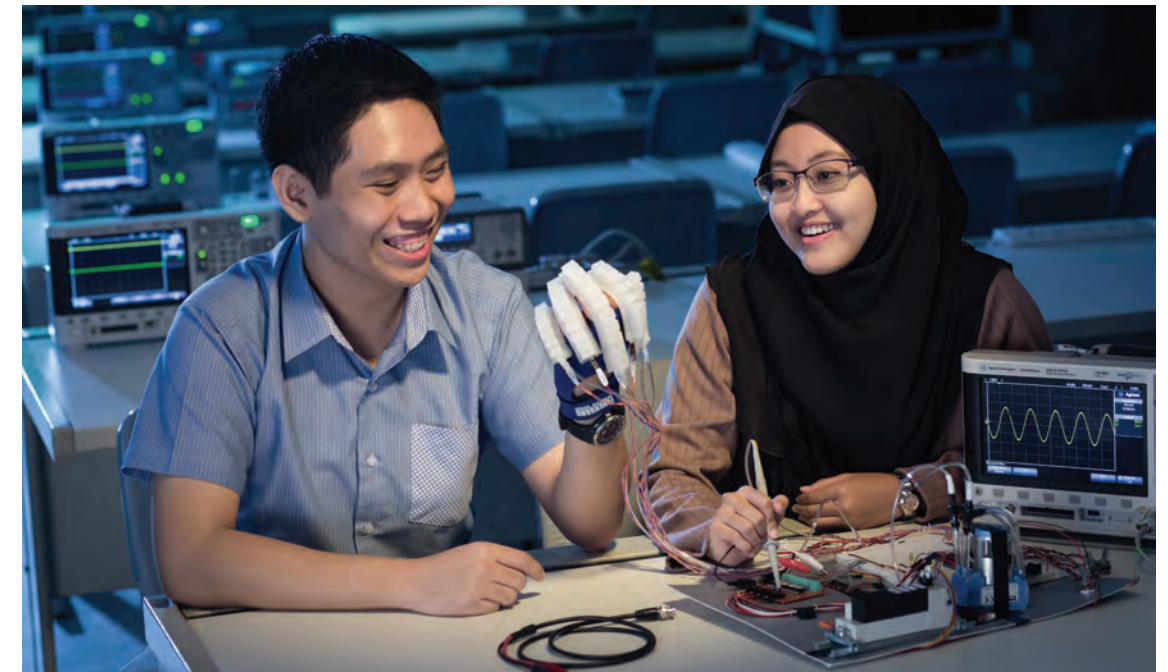
Get a head start on your university studies with the University Pathway Programmes at NUS and SUTD! Both pathways let you earn credits toward your future degree at either of these prestigious universities while studying at NP.

OVERVIEW OF YOUR BME JOURNEY



*For selected students only

WHAT YOU WILL LEARN



YEAR 1

- Computing Device Fundamentals
- Electrical Engineering Fundamentals
- Career & Engineering Professional Preparation
- Engineering Mathematics 1
- Engineering Mathematics 2
- Fundamentals of Medical Technology
- Human Physiology
- Mechanical Engineering Fundamentals
- Programming
- 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[^]

YEAR 3

- Capstone Project
- Internet of Medical Things
- Medical Data Analytics
- Process & Optimisation
- Final-year Project
- Six-month Internship
- Project ID: Connecting the Dots[^]

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 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

As a BME graduate, you can pursue various degree programmes at local universities. You can also gain credit exemptions from overseas universities, including the following:

Australia

- University of New South Wales
 - Bachelor of Engineering (Honours)/Master of Engineering (Biomedical Engineering)
- Queensland University of Technology
 - Bachelor of Engineering (Honours) (Medical)
- University of Queensland
 - Bachelor of Engineering (Honours) (Electrical and Biomedical Engineering)
- University of Sydney
 - Bachelor of Engineering (Honours) (Biomedical)

United Kingdom

- University of Sheffield
 - Bachelor of Engineering (Biomedical Engineering)
- Cardiff University
 - Bachelor of Engineering/Master of Engineering (Medical Engineering)



Tey Ming Chuan
Class of 2018

Pursuing a Master of Science in Business Analytics at NUS

CAREER

Singapore is fast becoming a global hub for biomedical research and the healthcare industry, and is home to a growing number of multinational MedTech companies and innovative MedTech start-ups. With bright job prospects in this field, you can look forward to pursuing careers in these job roles:

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

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.



Peggy Yeo
Class of 2016

Clinical application and regulatory specialist at Healthstats International Pte Ltd

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

N43

Diploma in Electrical Engineering Revamped



Get latest updates on course



- ▶ 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!**
- ▶ Customise your learning by choosing from **5 exciting pathways**
- ▶ Be among the first to earn a **Second Major in Business**, and unlock new opportunities for your career and further studies

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'll 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 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 new 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.

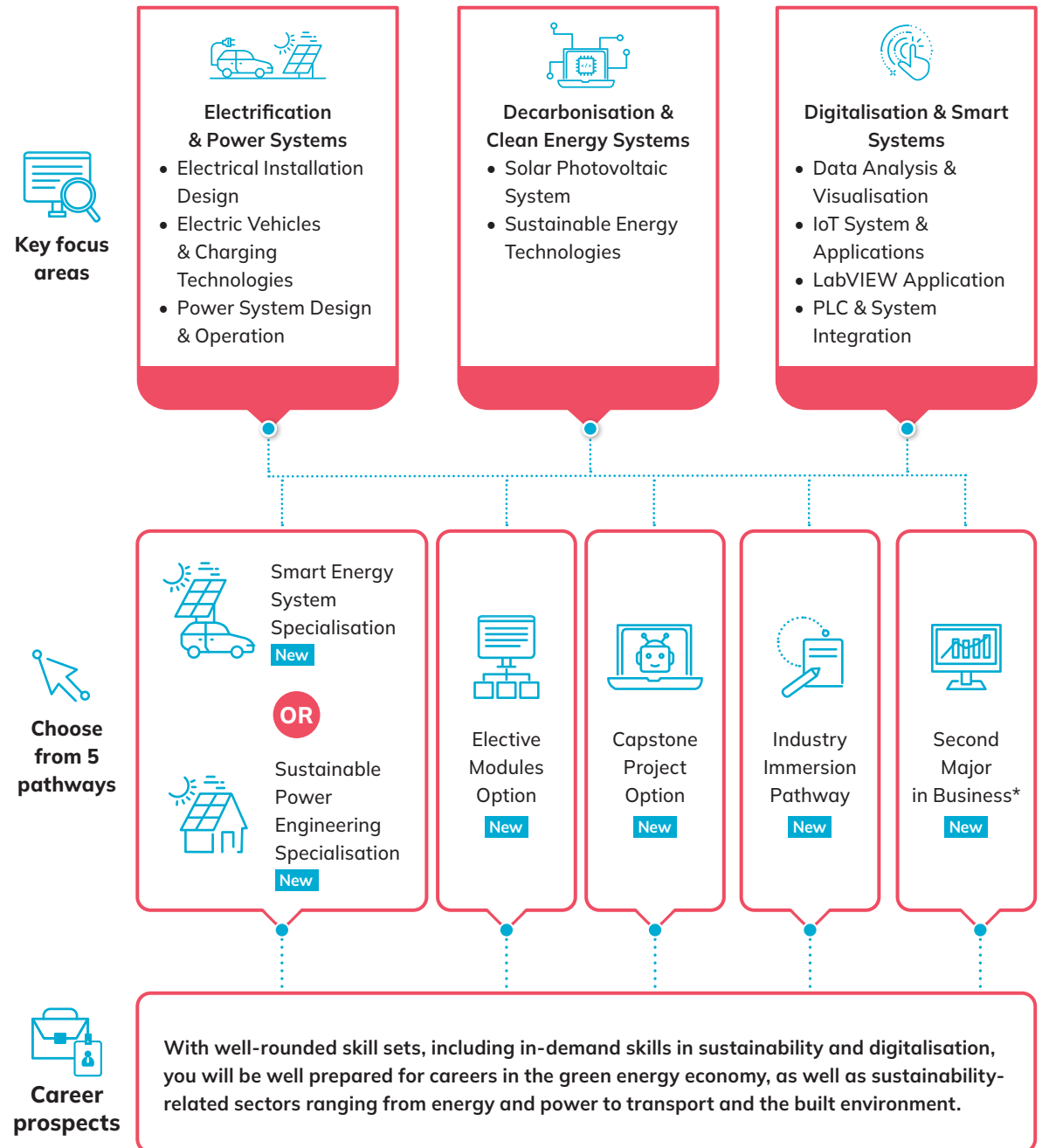
Own Your Learning

You can personalise your learning journey with these pathways:

- Smart Energy System Specialisation New**
 Drive digital transformation of the energy sector through advanced sensors, IoT devices, and AI to implement smart energy management.
- Sustainable Power Engineering Specialisation New**
 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.
- Elective Modules Option New**
 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 New**
 Apply your knowledge to tackle real-world challenges while deepening your technical expertise.
- Industry Immersion Pathway New**
 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* New**
 Be among the first poly students to graduate with a Second Major in Business. Gain an edge with this dual qualification, which will unlock new opportunities for your career and further studies.

*For selected students only

OVERVIEW OF YOUR EE JOURNEY



*For selected students only

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
- 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
- Financial Markets & Instruments
- Global Business

YEAR 3

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

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

Elective Module Option

Choose 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

[^]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 only

* 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.



Capstone Project Option

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

Industry Immersion Pathway

- One-year Internship OR One-year Project

Second Major in Business

- Business Law
- Corporate Finance
- Develop a Business
- People & Culture
- Marketing in the Digital Age

FURTHER STUDIES

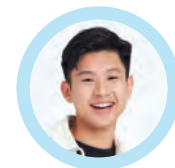
This diploma is recognised by leading universities both locally and abroad. You may be granted advanced standing or module exemptions when applying for related degree programmes at local universities and overseas universities in countries such as Australia and the United Kingdom.

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



Loh Jia Wen Class of 2022

Pursuing a degree in Electrical and Electronic Engineering at NTU under the Nanyang Scholarship



Ryan Soh Class of 2023

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

CAREER

With 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. With a Second Major in Business, you will be equipped to take on expanded career roles, such as engineering project financing.

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



Valencia Chong Class of 2020

Electrical engineer at Jacobs

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 Electrical Engineering, visit www.np.edu.sg/ee

N44

Diploma in Electronic & Computer Engineering Revamped



Get latest updates on course



- ▶ One of the **most established** electronic and computer engineering diplomas in Singapore
- ▶ **Broad-based curriculum** with strong foundation in electronics & circuits, software programming, communication technologies and in-demand fields such as Internet of Things (IoT), Data Analytics, Cloud Computing, Artificial Intelligence (AI) & Machine Learning
- ▶ Choose between two in-demand specialisations – **Artificial Intelligence of Things (AIoT)** or **Microelectronics**
- ▶ Be among the first to earn a **Second Major in Business**, and unlock new opportunities for your career and further studies New

WHAT THE COURSE IS ABOUT

Who can live without electronics and computers in this day and age? 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).

Building 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 electronics and circuit designs, software programming, as well as networking 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* New

Be among the first poly students to graduate with a Second Major in Business. Gain an edge with this dual qualification, which 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, and industry-sponsored projects at NP's technology centres. Plus, undertake local or overseas study trips to widen your exposure to the exciting world of engineering!

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 only

Specialise in Emerging Areas

In your final year, you can choose to specialise in:

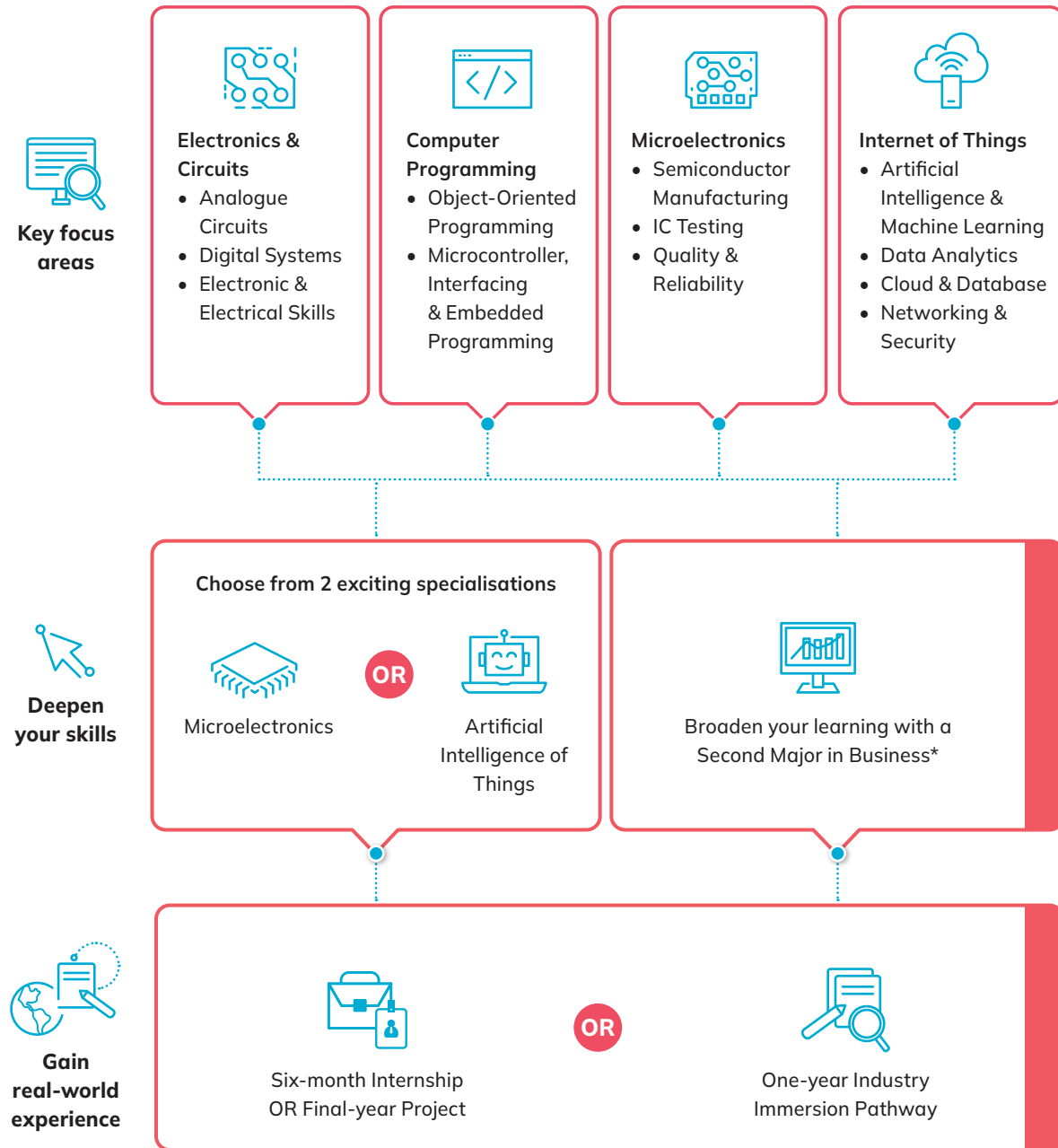
- **Artificial Intelligence of Things:** Learn how AI is applied in electronics and the Internet of Things (IoT) to develop smarter devices and systems with optimised features and functionalities.
- **Microelectronics:** Gain hands-on experience in the manufacturing of integrated circuits, covering both front- and back-end semiconductor fabrication, quality control, reliability, and integrated circuit testing.



AWARD-WINNING DUO

ECE graduate Reginald Loo (left) and EE graduate Kaung Zin Thu won the Lee Hsien Loong Interactive Digital Media Smart Nation Award for developing a cutting-edge autonomous cleaning service robot. It can independently navigate to specific locations, identify cleaning targets and perform cleaning tasks without any human intervention.

OVERVIEW OF YOUR ECE JOURNEY



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
- 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
- Financial Markets & Instruments
- Global Business

YEAR 3

- Capstone Project*
- Six-month Internship OR Final-Year Project
- Project ID: Connecting the Dots[^]

Artificial Intelligence of Things Specialisation

- AI Applications
- IoT & Cloud Security
- Machine Learning with Python

Microelectronics Specialisation

- IC Testing, Assembly & Packaging
- Quality & Reliability
- Semiconductor Manufacturing

Industry Immersion Pathway

- One-year Internship OR One-year Project

Second Major in Business

- Business Law
- Corporate Finance
- Develop a Business
- People & Culture
- Marketing in the Digital Age

[^]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 only.

* 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.

*For selected students only

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 universities 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, such as:

- 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



Yee Sheng Jie
Class of 2014

Quality engineer at GovTech



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 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 Electronic & Computer Engineering, visit www.np.edu.sg/ece

N41

Diploma in Mechanical Engineering



Get latest updates on course



- ▶ A broad-based curriculum that prepares you for **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
- ▶ Opportunity to specialise in **Automation Design Engineering** or **Mobility Design Engineering** with industry immersion at organisations such as ST Engineering, A*STAR and TÜV SÜD PSB

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) to give you a head start into building such sleek technology, you'll be well positioned to excel in diverse fields from precision engineering, environment and energy, facilities and infrastructure, to the transportation sectors.

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 Strength of Materials in your second year.

You will also gain insights into the latest technologies that are reshaping the industry, such as Artificial Intelligence, 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, you can specialise in one of two areas:

- 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 in Mechanical Drive Systems, Electrical Technology Systems, and Mobility System Design & Integration, you will develop electro-mechanical mobility skills that are in high demand within the mobility technology sector.

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 gain deeper insights and hands-on experience to build valuable skills and industry knowledge.



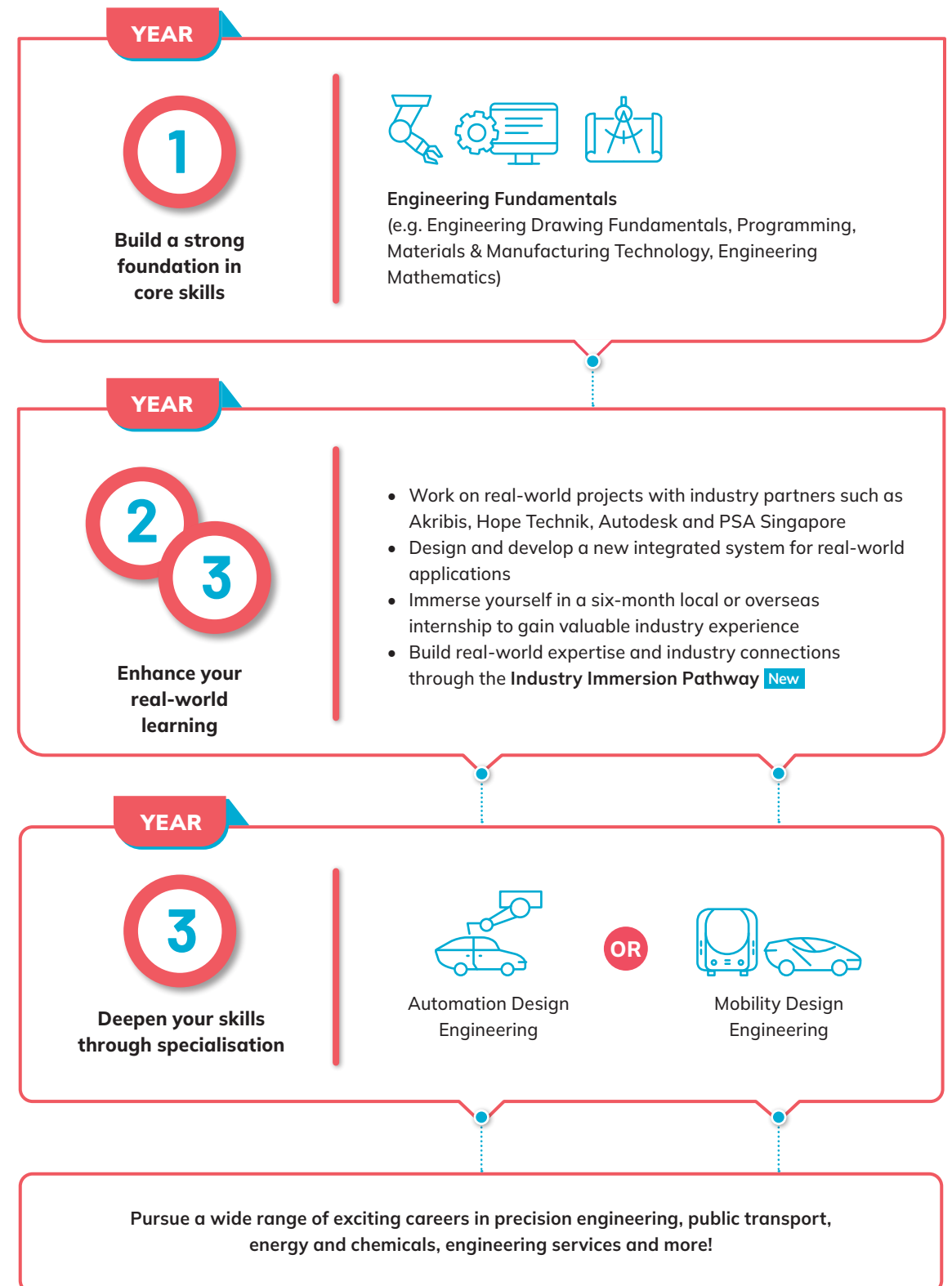
PASSION FOR CARS

"During my time at NP, I worked on a Final-year Project focused on automotive technologies and motorsports. I even represented NP at the Shell Eco-marathon Asia in 2019, with the energy-efficient car I built with my teammates, and came in second place in the region! This success inspired me to continue my journey in Mechanical Engineering at NTU, where I contributed to the development of NTU's first Formula Student race car, NVF-1."

Justin Wong Class of 2019

Justin (far right) was one of the 12 successful applicants who got accepted into the prestigious master's degree programme in race car aerodynamics at the University of Southampton, United Kingdom.

OVERVIEW OF YOUR ME JOURNEY



WHAT YOU WILL LEARN

YEAR 1

- Career & Engineering Professional Preparation
- Engineering Drawing Fundamentals
- Engineering Mathematics 1 & 2
- Electrical Engineering Fundamentals
- Materials & Manufacturing Technology
- Mechanical Engineering Fundamentals
- Programming
- Thermofluids
- Strength of Materials
- 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
- Final-year Project
- Six-month Internship
- Project ID: Connecting the Dots[^]

Automation Design Engineering Specialisation

- Automation System Design & Integration
- Design for Manufacturing & Assembly
- Smart Sensors & Actuator

Mobility Design Engineering Specialisation

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

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

You will be well-prepared for further studies 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

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

New Zealand

- Auckland University of Technology
- University of Auckland

United Kingdom

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



Cheng Shi Hui
Class of 2020

Pursuing a PhD in additive manufacturing at NTU

CAREER

With a solid engineering foundation and sought-after skills, you'll have excellent job prospects across many industries. 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

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, colour 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

N50

Diploma in

Mechatronics & Robotics Revamped



Get latest updates on course



- ▶ 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 and Industrial IoT for exciting career opportunities in **robotics engineering and automation!**
- ▶ Choose to specialise in either **Autonomous Systems** or **Automation & Industrial Cybersecurity**
- ▶ Be among the first to earn a **Second Major in Business**, and unlock new opportunities for your career and further studies

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 functional applications using Robot Operating System (ROS).

Specialisations in Emerging Areas

In your final year, you can choose to specialise in one of two 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, while also learning how to secure industrial control systems by applying cybersecurity strategies and solutions.

Double Major New

Be among the first poly students to graduate with a Second Major in Business. Gain an edge with this dual qualification, which will unlock new opportunities for your career and further studies.

*For selected students only

Industry-relevant Learning

With many modules co-developed, co-delivered and co-assessed with our industry partners such as Omron Electronics, Universal Robots, HOPE Technik and MooVita, you can be sure that you will be prepared for the industry when you graduate. To give you an edge in your career, there are also opportunities to go on a six-month internship at companies such as PSA Singapore, Bosch Rexroth, LKH Precicon, A*STAR 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.

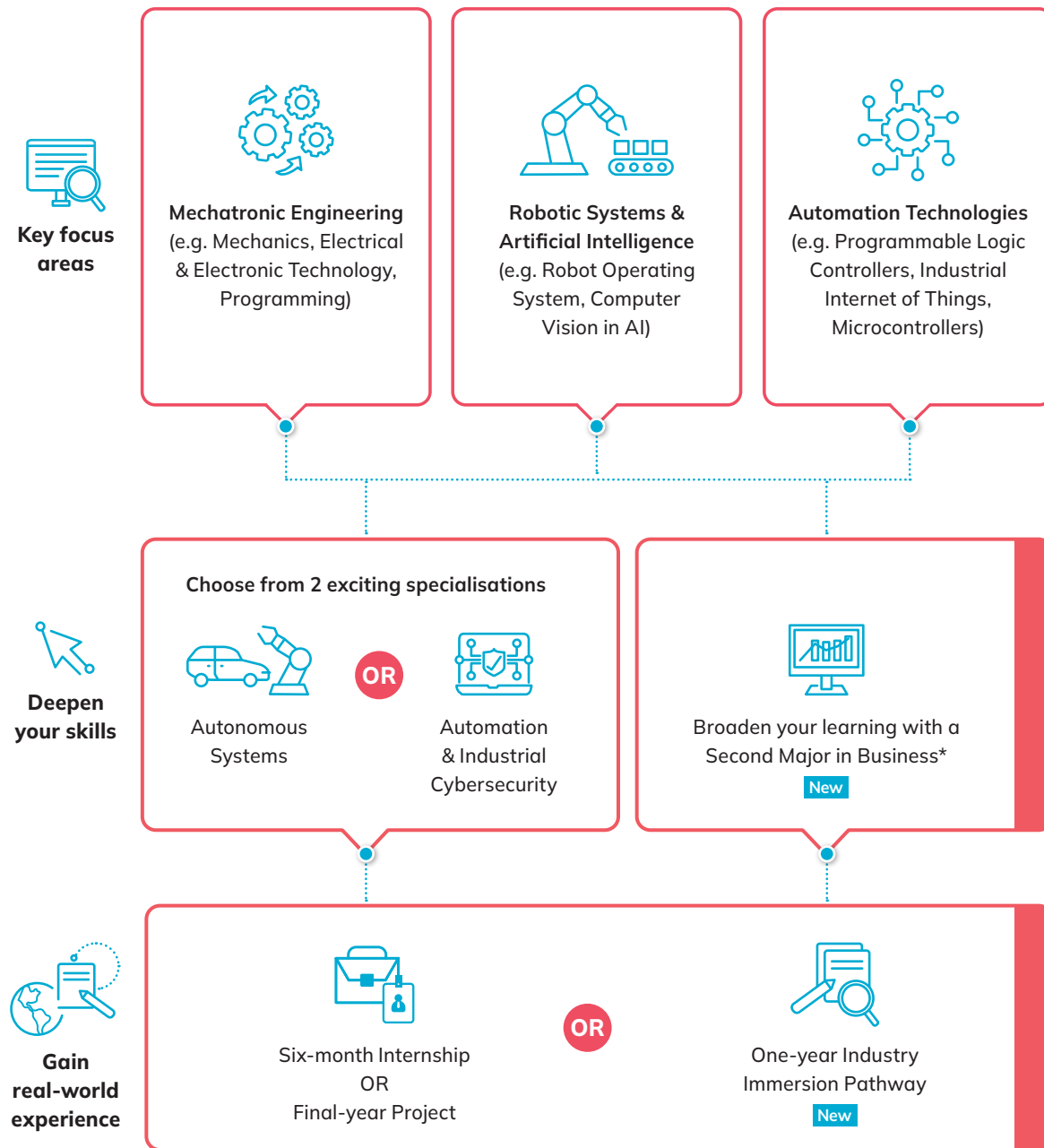
Plus, gain hands-on experience at high-tech mobility solutions provider MooVita, situated right on campus!



WORLD SKILLS CHAMPIONS

Mack Kai Hin and Ethan Ong clinched gold in the mechatronics category at the 2023 WorldSkills ASEAN competition. A biennial event that brings competitors from Southeast Asia, the duo demonstrated their expertise in handling industrial equipment, and programming equipment control systems and human machine interfaces.

OVERVIEW OF YOUR MR JOURNEY



*For selected students only

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
- 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
- Financial Markets & Instruments
- Global Business



YEAR 3

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

Autonomous Systems Specialisation

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

Automation & Industrial Cybersecurity Specialisation

- Advanced Automation System
- Operational Technology Security
- Augmented Reality & Robotics Systems

Industry Immersion Pathway

- One-year Internship OR One-year Project

Second Major in Business

- Business Law
- Corporate Finance
- Develop a Business
- People & Culture
- Marketing in the Digital Age

[^]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 only.

* 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



Danish Abrisam Bin Ismail Class of 2019

Pursuing a degree in Electrical Engineering with Automation and IoT at University of Applied Sciences Mannheim

CAREER

As a designer and engineer of automation systems, you will be well sought-after in jobs that involve the design, development and manufacturing of intelligent products and systems. You can look forward to pursuing careers in the following job roles:

- Robotics Engineer
- Automation Engineer
- Application Engineer
- WSH Coordinator
- Assistant Engineer/Associate Engineer in Process Engineering
- Equipment Engineering
- Facility Engineering
- Quality Engineering
- Product Engineering
- Production Engineering
- Quality Assurance
- Quality Control



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 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 Mechatronics & Robotics, visit www.np.edu.sg/mr

N42

Diploma in

Offshore & Sustainable Engineering

Revamped



Get latest updates on course



- ▶ 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 to give you an edge in managing marine operations and processes
- ▶ Apply for **prestigious MaritimeONE Scholarships** that cover tuition fees and allowances
- ▶ **Enjoy advanced standing** for 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.

Moreover, the course will hone your knowledge in Artificial Intelligence (AI) applications, including autonomous vessels. You will also learn about essential digital skills, such as data analytics for technical operations and processes.

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 two options: a one-year internship for in-depth, hands-on exposure to industry practices, or a one-year project to address real-world challenges. Alternatively, choose a six-month internship with leading companies such as the Association of Singapore Marine & Offshore Energy Industries (ASMI), Dyna-Mac Holdings, and Seatrium Limited. There are also opportunities for you to go on overseas study 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

New



Geometry & Buoyancy



Hydrostatics and Stability



Structure & Resistance

MARINE ENGINEERING



Marine Propulsion & Systems



Maritime Decarbonisation

New

SUSTAINABLE ENGINEERING

New



Engineering & Sustainability



Offshore Renewables



Capstone Project



Your learning experience

- Learn how to design marine vessels and offshore structures
- Hone your proficiency in artificial intelligence applications and develop essential digital skills
- Embark on a six-month internship at local/overseas marine and offshore companies
- Opportunity to work on multidisciplinary projects in conventional energy, new energy, renewables or decarbonisation solutions **New**
- Build real-world expertise and industry connections through the Industry Immersion Pathway **New**



Career prospects

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

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[^]
- 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

- Capstone Project
- Engineering Modelling
- Marine Production Technology
- Six-month Internship OR Final-year Project
- Project ID: Connecting the Dots[^]

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 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 a prestigious Bachelor of Engineering with Honours in Naval Architecture and Marine Engineering degree programme.



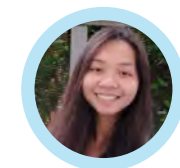
Keith Hah
Class of 2020

Pursuing a Mechanical Engineering degree at NTU

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



Leow Wei Chi
Class of 2017

Commercial executive at Penguin Shipyard

ENTRY REQUIREMENTS

Aggregate Type ELR2B2-C

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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.

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Candidates with severe vision deficiency, colour 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



HEALTHCARE CYBERCOP

Zhe Zhi holds a bioengineering degree from NTU and currently serves as a manager in the cybersecurity and medical devices division at MOH.

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 engineer at DSTA's AI and Data Analytics Centre of Excellence, Digital Hub.

ZENAS LIM

Engineering Science graduate, Class 2015



MASTER IN ROBOTICS

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



PROJECT MANAGER

Guoli graduated from NTU with a degree in mechanical engineering and is currently a senior project planner at Seatrium Limited.

YEO GUOLI

Marine & Offshore Technology* graduate, Class of 2015

*Renamed the Diploma in Offshore & Sustainable Engineering



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



SHAPING THE FUTURE OF TRANSIT

A recipient of the Singapore-Industry Scholarship, Jin Li graduated from NUS with a degree in Electrical Engineering. She is a senior engineer at SBS Transit.

TENG JIN LI

Electrical Engineering graduate, Class of 2016



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

