ENGINEERING

- AEROSPACE ENGINEERING
- AUTOMATION & MECHATRONIC SYSTEMS
- BIOMEDICAL ENGINEERING
- COMMON ENGINEERING PROGRAMME
- ELECTRICAL ENGINEERING
- ELECTRONIC & COMPUTER ENGINEERING
- ENGINEERING SCIENCE
- MARINE & OFFSHORE TECHNOLOGY
- MECHANICAL ENGINEERING
Engineering with that something xtra!

School of Engineering

9  Common Engineering Programme (N71)
12  Engineering Science (N93)
16  Aerospace Engineering (N65) REVAMPED
20  Automation & Mechatronic Systems (N50)
24  Biomedical Engineering (N60)
27  Electrical Engineering (N43) REVAMPED
31  Electronic & Computer Engineering (N44)
34  Marine & Offshore Technology (N42)
37  Mechanical Engineering (N41)
From industry induction to mentorship, future city programme to overseas exposure, you’ll find engineering with that something xtra at Ngee Ann Polytechnic’s School of Engineering (SoE)!
At SoE, there are as many as 8 engineering diplomas for you to pick from, depending on your interest or aptitude.

**Engineering Science (ES)**
Get a strong foundation in engineering and related domains such as mathematics, physics, applied science and research.

**Aerospace Engineering (AEG)**
The only aerospace diploma that allows you to choose between the Avionics and Mechanical specialisation options, two engineering disciplines in the aerospace industry.

**Automation & Mechatronic Systems (AMS)**
A well-designed curriculum that combines mechanics, electronics and programming to engineer smart machines such as autonomous vehicles, robots and smart devices.

**Biomedical Engineering (BME)**
The only poly diploma that bridges engineering and life sciences.

**Electrical Engineering (EE)**
A broad-based course that prepares you for careers in diverse sectors ranging from clean energy, power engineering, transportation to practising licensed electrical work.

**Electronic & Computer Engineering (ECE)**
A solid diploma that gives you a strong foundation in electronic hardware design, software programming skills and computer networks.

**Marine & Offshore Technology (MOT)**
A unique course that covers both naval architecture and offshore engineering.

**Mechanical Engineering (ME)**
A broad-based curriculum that prepares you for the future economy in precision engineering and manufacturing, facilities and infrastructure, environment and energy, and transportation.

**Common Engineering Programme (CEP)**
But if you are still not sure which engineering discipline best suits you, fret not. The special Common Engineering Programme (CEP) will help you gain a better understanding of the different disciplines before you make your choice. You’ll be able to choose your preferred engineering diploma from either the Mechanical Track or the Electrical & Electronic Track at the end of your first semester. Find out more about CEP on Page 9.
SKILLSFUTURE INITIATIVES

Enhanced Internships
You can look forward to longer and more structured internships, as NP continues to collaborate with industry partners to provide more effective on-the-job training. Enhanced internships have been rolled out for most courses. Part of the national SkillsFuture Initiative, this programme allows you to better apply the skills you have learnt in the classroom to the workplace.

SkillsFuture Work-Study Post-Diploma Programme
You can join the SkillsFuture Work-Study Post-Diploma Programme to get a head start in your career. A work-study programme, you will be matched with a company and undergo structured on-the-job training, and obtain an industry-recognised certification, such as the Specialist Diploma in Electrical Design and Operation, as well as the Specialist Diploma in Marine Production from NP. There is also the Start-up Talent Factory programme for fresh poly graduates who are keen to do a 9 to 12-month stint at a start-up.

SkillsFuture Series
NP also offers several courses under the SkillsFuture Series in these emerging skills areas: Entrepreneurship, Advanced Manufacturing, Tech-enabled Services and Data Analytics.
BEYOND THE CLASSROOM

At SoE, there are many exciting opportunities to inspire your passion for learning and innovating. Our strong industry links also ensure that you pick up relevant industry skills and are exposed to emerging technologies.

But don’t take our word for it – check out what our students have done and where they’ve been! With the broad-based curriculum that SoE offers, you can expect limitless possibilities and a journey with that something xtra.

Future City Programme
Shape the Singapore of tomorrow through this unique programme! You will get exposed to or be involved in future city projects through mentorships, learning journeys and internships.

Scan the QR code to find out more about the Future City Programme!

Service-Learning
Design and develop engineering solutions that benefit society and make classroom learning more purposeful. For example, students worked with Lions Befrienders to create the NP RoboCoach, which assists elderly in keeping fit.
Overseas Exposure
Go on overseas trips that deepen your skill sets.

University Research
Work with professors from NUS, NTU and SUTD on real-world projects in areas like artificial intelligence and photonics.

Induction Programmes
Participate in induction programmes which include industry visits and talks that give you a sneak peek at the wide spectrum of careers in the field of engineering.

Internship
Gain valuable real-world experience through internships.

Integrated Real-World Project
Work on an integrated project, where you will develop solutions for real-world problems using design-thinking methods.
The Math and Science Whiz

Vhora Shrayans Suresh
Mechanical Engineering graduate, Class of 2016

A strong interest in physics and math, coupled with inspiration from the movie The Aviator and the keenness to study how machines were made, propelled Shrayans to take up the Mechanical Engineering course in NP. While in NP, he served as the President of Rangers, a selected group of student ambassadors from SoE. He also credits his great memories in NP to his encouraging supervisors. Shrayans is pursuing Mechanical Engineering at NTU and aims to work in the field before coming back to NP as a lecturer.

The Young Researcher

Zenas Lim
Engineering Science graduate, Class of 2015

Zenas’ passion for research deepened when he worked with experts at A*STAR’s Data Storage Institute on his final-year project. His team’s project eventually won the top prize in NP under the Polytechnic Student Research Programme in 2015. As the most outstanding NP graduate of his cohort, Zenas was awarded the Ngee Ann Kongsi Gold Medal. He also clinched the Lee Kuan Yew Award. He is currently pursuing a direct Masters in Electronic and Information Engineering at Imperial College London.
The Tech Entrepreneur
Jasper Yap
Aerospace Technology* graduate, Class of 2017

Jasper picked up programming skills on his own while working part-time in a maid agency, where he created a system that enabled customers to complete the paperwork process in five minutes instead of the usual hour. Word got out and his skills became so sought after that at least five other companies contacted him to create similar systems for them. In 2016, he co-founded Yosei Labs, a web design agency which has since been acquired by EeZee, a Business-to-Business procurement company with over 150 suppliers on its platform.

*The diploma has been renamed as Aerospace Engineering since AY2019.

The Renaissance Engineer
Pavatharani Senthil Kumar
Aerospace Technology* graduate, Class of 2016

From young, Pavatharani has always wanted to be a pilot and was curious how aircraft worked. In fact, tinkering with toys by taking them apart and fixing them afterward was something that came naturally to her. Undeterred by gender norms, she aspires to be one of the rare female leaders in the aerospace industry and intends to make the industry more eco-friendly. She is currently in the prestigious Renaissance Engineering Programme at Nanyang Technological University, under the Renaissance Engineering Programme Scholarship.
The Biomedical Engineer

Tey Ming Chuan
Biomedical Engineering graduate, Class of 2018

Ming Chuan decided to pursue the Biomedical Engineering course in NP as he wanted to explore the seemingly limitless possibilities in integrating biology and engineering.

His opportunity came in his final year when he undertook a project in collaboration with the National University Hospital. Ming Chuan and his team mate worked on a new innovation to aid in administering liquid food to patients with swallowing difficulties. Instead of tapping on traditional x-rays to trace the internal placement of the feeding tube, the project utilises air pressure from an electromechanical pneumatic system which is a safer, simpler and cheaper method.

The project took six months, as well as numerous hospital visits for collecting feedback, to come to pass. The team’s efforts were recognised, as the project received a Merit Prize at the Tan Kah Kee Young Inventors’ Award and a Bronze Award (Polytechnic Category) at the Biomedical Engineering Society’s 11th Scientific Meeting.

Looking ahead, Ming Chuan hopes to use his technical skills and knowledge to develop a new innovation that can benefit the community in future.

The Engineer & Doctor

Anne Foo
Engineering Science graduate, Class of 2018

At NP, Anne had the opportunity to work on several research projects, including an award-winning one where she developed an algorithm for the detection of coronary artery disease. This project made her realise how she could use her skills to make people’s lives better and the possibility of pursuing a career as a doctor in the future.

Anne has had her dream realised as she has been accepted in the new SUTD-Duke-NUS Special Track, a degree programme jointly offered by the Singapore University of Technology and Design and Duke-NUS Medical School. The interdisciplinary programme aims to prepare students with a background in engineering for leadership roles in healthcare as clinicians who can treat patients and develop medical innovations.
DIPLOMA IN MARINE & OFFSHORE TECHNOLOGY

- The only diploma that covers both naval architecture and offshore engineering
- Enhanced internships and SkillsFuture Work-Study Post-Diploma Programmes to deepen your skills
- Prestigious ASMI-MOT Scholarship that covers tuition fees and allowances
WHAT THE COURSE IS ABOUT

You’re one step closer to fulfilling your dreams of building your own ship when you join our Diploma in Marine & Offshore Technology (MOT). We will train you in naval architecture and offshore technology, which are among the most sought-after specialist skills in Singapore’s maritime industry.

With MOT, you will learn to design and build your own ship models, and test them in Singapore’s only towing tank located in our campus. Our strong emphasis on Integrated Real-world 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.

Thanks to MOT’s strong ties with key industry players, such as the Association of Singapore Marine Industries (ASMI), Keppel Offshore & Marine and SembCorp Marine, you get to go on frequent study trips to gain industry exposure and receive in-depth training that will stand you in good stead in your career!

In the first two years, you will be grounded with strong fundamentals of engineering, together with naval architecture, marine engineering and offshore design technology. Enhanced internships have also been rolled out for MOT students. In your final year, you will intern at a host company in the marine and offshore industry for six months and apply the skills learnt at the workplace.

WHAT YOU WILL LEARN

<table>
<thead>
<tr>
<th>YEAR 1</th>
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<th>YEAR 2</th>
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<th>YEAR 3</th>
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<tbody>
<tr>
<td>Electrical Engineering Fundamentals</td>
<td>Naval Architecture 1</td>
<td>Integrated Real-world Project 5</td>
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<td>Electrical &amp; Electronics Technology</td>
<td>Marine CAD</td>
<td>Marine Propulsion Systems</td>
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<td>Engineering Mathematics 1 &amp; 2</td>
<td>Naval Architecture 2</td>
<td>Marine Design Systems</td>
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<td>Integrated Real-world Project 1 &amp; 2</td>
<td>Marine Design Drafting</td>
<td>Marine &amp; Offshore Design</td>
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<tr>
<td>Materials &amp; Manufacturing Technology</td>
<td>Marine Auxiliary Systems</td>
<td>Marine Design Applications</td>
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<td>Mechanical Engineering Fundamentals</td>
<td>Marine Production Technology</td>
<td>Offshore Engineering</td>
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<td>Programming</td>
<td>Marine &amp; Offshore Technology</td>
<td>Six-month Internship</td>
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<td>Thermofluids</td>
<td>Strength of Materials</td>
<td>Project ID: Connecting the Dots*</td>
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<td>Health &amp; Wellness*</td>
<td>Integrated Real-world Project 3 &amp; 4</td>
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<td>Innovation Made Possible*</td>
<td>World Issues: A Singapore Perspective*</td>
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<td>Communication Essentials For Engineers*</td>
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<td>English Language Express**</td>
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* Interdisciplinary Studies (IS) modules account for up to 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. IS 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.
/ CAREER /

Pursue a career in the design, marketing, commerce, survey, production, safety, human resource, and research and development areas of the marine and offshore industries.

You can also apply for the SkillsFuture Work-Study Post-Diploma Programmes and enrol in courses such as the Specialist Diploma in Marine Production and Specialist Diploma in Marine Design to get a head start in your career. These two specialist diplomas are work-study industry certification programmes where you will be matched with a company and undergo structured on-the-job training.

/ ENTRY REQUIREMENTS /

AGGREGATE TYPE ELR2B2-C

To be eligible for consideration, candidates must have the following GCE ‘O’ Level examination (or equivalent) results.

<table>
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<tr>
<th>SUBJECT</th>
<th>‘O’ LEVEL GRADE</th>
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<tbody>
<tr>
<td>English Language</td>
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<tr>
<td>Mathematics (Elementary/Additional)</td>
<td>1-6</td>
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<tr>
<td>Science (with Physics, Chemistry or Biology component)</td>
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<td>or Biotechnology</td>
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<td>or Computing/Computer Studies</td>
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<td>or Design &amp; Technology</td>
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<td>or Electronics/Fundamentals of Electronics</td>
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<td>or Engineering Science</td>
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<td>or Physical Science</td>
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You must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type listed at www.np.edu.sg/admissions/Documents/ELR2B2.pdf

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

Candidates with hearing deficiency or severe vision deficiency should not apply for the course.

Related Courses

- Aerospace Engineering
- Automation & Mechatronic Systems
- Common Engineering Programme
- Engineering Science

/ 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.

Together with Newcastle University, the Singapore Institute of Technology offers you the chance to pursue a prestigious degree in Marine Engineering, Naval Architecture or Offshore Engineering. This subsidised degree programme can be completed in two years. You can pursue a Bachelor of Engineering with Honours in Marine Engineering, Naval Architecture or Offshore Engineering.

You may also enjoy advanced standing at local universities such as Nanyang Technological University and National University of Singapore, or overseas universities such as Newcastle University, University of Glasgow, University of Strathclyde, University of Sydney and University of Tasmania.

Head Start in His Career

Sim Qi Bin was encouraged by his company, Keppel Singmarine, to join the SkillsFuture Earn and Learn Programme. With the real-world exposure to shipyards and a supportive employer, the MOT graduate was able to better chart his future career in the industry.

CONTACT US

For the most up-to-date information on NP’s Diploma in Marine & Offshore Technology and its modules, log on to www.np.edu.sg/mot