NGEE ANN POLY

SCHOOL OF

ENGINEERING

- AEROSPACE ELECTRONICS
- AEROSPACE ENGINEERING
- AUDIO-VISUAL TECHNOLOGY
- AUTOMATION & MECHATRONIC SYSTEMS
- BIOMEDICAL ENGINEERING
- CLEAN ENERGY MANAGEMENT
- COMMON ENGINEERING PROGRAMME NEW
- ELECTRICAL ENGINEERING
- ELECTRONIC & COMPUTER ENGINEERING
- ENGINEERING SCIENCE
- MARINE & OFFSHORE TECHNOLOGY
- MECHANICAL ENGINEERING
- NETWORK SYSTEMS & SECURITY

ENGINEERING WITH THAT SOMETHING XTRA!

School of **ENGINEERING**

10 Common Engineering Programme (N71) **NEW!**
13 Engineering Science (N93)
17 Aerospace Electronics (N75)
20 Aerospace Engineering (N65) **RENAMED**
25 Audio-Visual Technology (N76)
29 Automation & Mechatronic Systems (N50)
33 Biomedical Engineering (N60)
36 Clean Energy Management (N84)
40 Electrical Engineering (N43)
45 Electronic & Computer Engineering (N44)
49 Marine & Offshore Technology (N42)
53 Mechanical Engineering (N41)
57 Network Systems & Security (N64)

From multiple learning pathways to overseas exposure, real-world projects to enhanced internships, industry induction to mentorship, you'll find engineering with that something xtra at Ngee Ann Polytechnic's School of Engineering (SoE)!

MULTIPLE
LEARNING PATHWAYS

At SoE, there are as many as 12 engineering diplomas for you to pick from.

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 Electrical & Electronic Track at the end of your first semester. Find out more about CEP on Page 10.

Specific Engineering Diploma

Choose this if you have decided on a particular engineering course.

- Common foundational modules in your first semester
- Choose from 12 engineering diplomas:
  - Engineering Science
  - Aerospace Electronics
  - Aerospace Engineering
  - Audio-Visual Technology
  - Automation & Mechatronic Systems
  - Biomedical Engineering
  - Clean Energy Management
  - Electrical Engineering
  - Electronic & Computer Engineering
  - Marine & Offshore Technology
  - Mechanical Engineering
  - Network Systems & Security
- Some diplomas offer specialisation options in Year 2 or 3

Common Engineering Programme

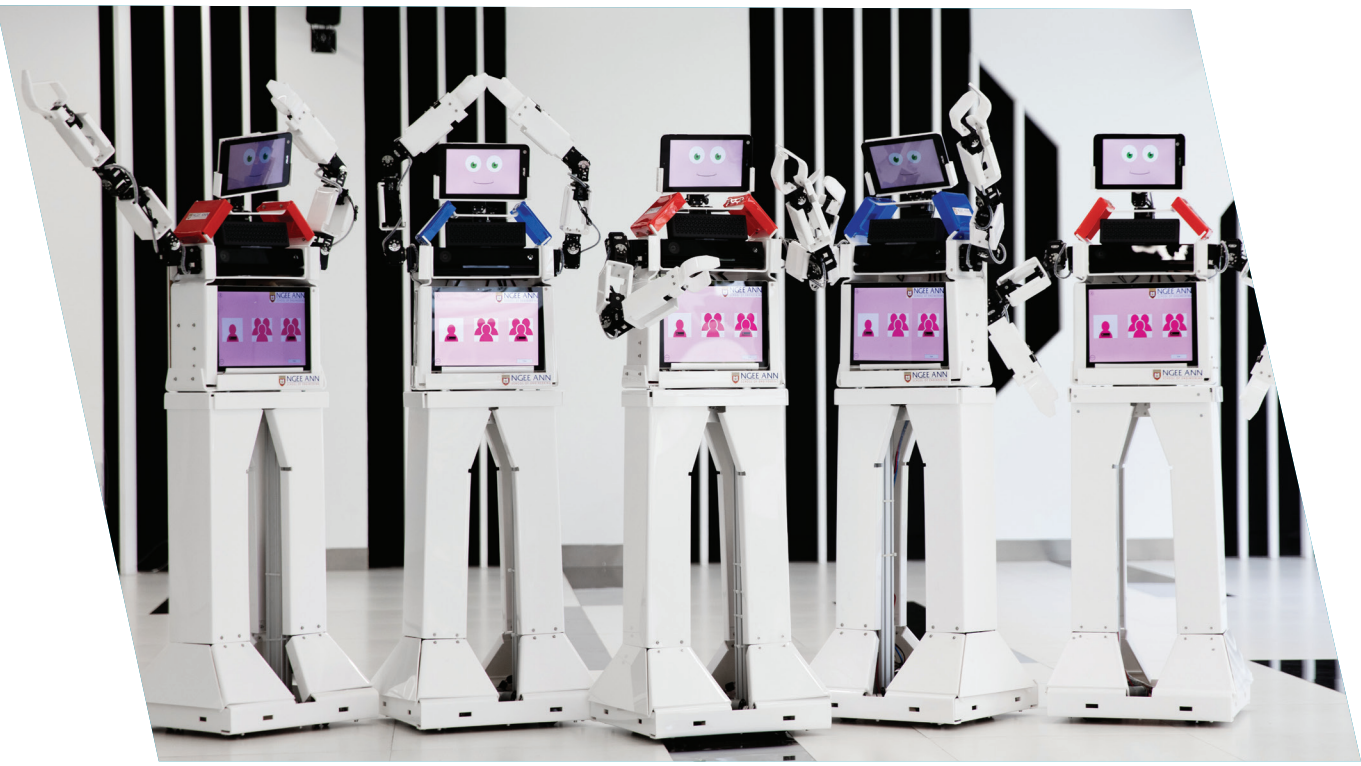
Choose this if you haven't decided on a particular engineering course.

- Common foundational modules expose you to different engineering disciplines
- Choose from 9 engineering diplomas towards the end of your first year
  - Aerospace Electronics
  - Aerospace Engineering
  - Automation & Mechatronic Systems
  - Biomedical Engineering
  - Clean Energy Management
  - Electrical Engineering
  - Electronic & Computer Engineering
  - Marine & Offshore Technology
  - Mechanical Engineering
- Some diplomas offer specialisation options in Year 2 or 3

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.



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

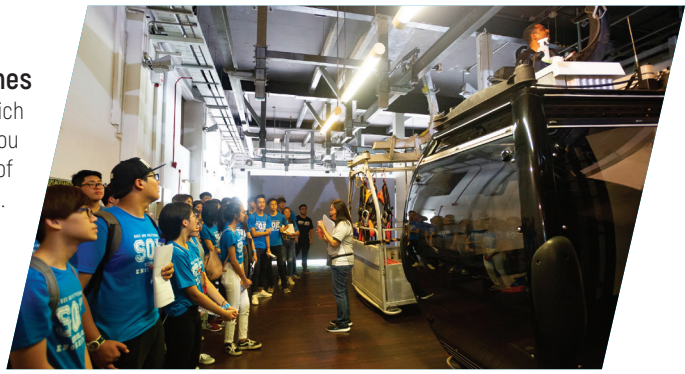
Go on overseas trips that deepen your skillsets.

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.

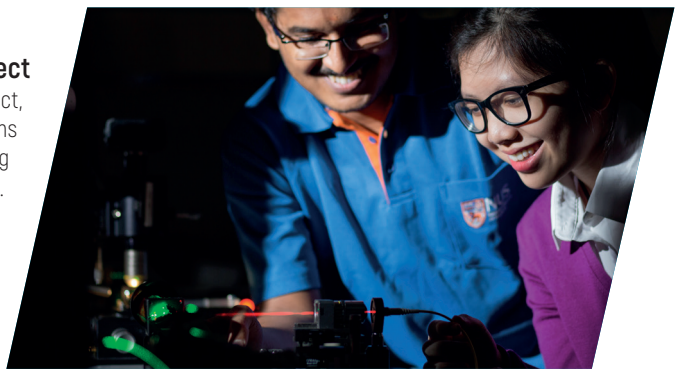


Internship

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.



SKILLSFUTURE INITIATIVES

Enhanced Internship

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.

Earn and Learn Programme

You can join the Earn and Learn 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.

OUR GRADUATES WITH THAT SOMETHING XTRA

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 Math and Science Whiz

Vhora Shrayans Suresh
Mechanical Engineering graduate, Class of 2016

A strong interest in physics and math, coupled with inspiration he got 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 has been offered to read Mechanical Engineering at NTU and NUS and aims to work in the field before coming back to NP as a lecturer.

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 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 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.

The IT Security Specialist

Wong Kee Hui
Network Systems & Security graduate, Class of 2016

Kee Hui's passion for computer games spurred him to enrol in the Nitec course in Info-Communications Technology, where he realised his potential in the network systems field. His good results in ITE eventually earned him a spot in NP. He continued to shine in NP and was awarded the Tay Eng Soon Gold Medal upon graduation. Even though he has secured a place in Nanyang Technological University to read Computer Science, Kee Hui is also considering working in the field first and taking up certification courses to become an IT security specialist. He is, after all, a true believer in the unconventional route!

Get latest updates on course

N71 COMMON ENGINEERING PROGRAMME NEW!

- Get more time to discover your interests
- Common foundational modules expose you to different engineering disciplines
- Nine engineering diplomas to choose from

/ WHAT THE COURSE IS ABOUT /

Interested in the world of Engineering but unsure about what course to go for? With the Common Engineering Programme (CEP), you will have more time to explore the many fields of engineering instead of deciding on a specific discipline straight away.

During the first semester, you will build a broad-based foundation in mechanical, electronic and electrical engineering, as well as mathematics and programming. Apply the knowledge that you've learnt by working on an integrated real-world project. You'll also gain real-world experience through industry visits and dialogues, and receive career guidance to help you make a more informed decision in your course selection.

You'll get to choose either the Mechanical Track or Electrical & Electronic Track after your first semester, and choose a specific engineering diploma* to major in by the end of your first year. Upon graduation, you will receive the same diploma as your peers who have enrolled for a particular course right from the start.

* Choose One of the Nine Engineering Diplomas!

Mechanical Track

- Aerospace Engineering (page 20)
- Automation & Mechatronic Systems (page 29)
- Marine & Offshore Technology (page 49)
- Mechanical Engineering (page 53)

Electrical & Electronic Track

- Aerospace Electronics (page 17)
- Biomedical Engineering (page 33)
- Clean Energy Management (page 36)
- Electrical Engineering (page 40)
- Electronic & Computer Engineering (page 45)

/ WHAT YOU WILL LEARN /

YEAR 1
Semester 1

- Engineering Mathematics 1
- Electrical Engineering Fundamentals
- Mechanical Engineering Fundamentals
- Programming
- Integrated Real-world Project 1
- Career & Professional Preparation I
- Innovation Made Possible^
- English Language Express^*

Choose either the Mechanical Track or Electrical & Electronic Track at the end of your first semester.

Mechanical Track
YEAR 1
Semester 2

- Engineering Mathematics 2
- Electrical & Electronics Technology
- Engineering & Society
- Materials & Manufacturing Technology
- Thermofluids
- Integrated Real-world Project 2
- Communication Essentials^
- Sports & Wellness^

Electrical & Electronic Track
YEAR 1
Semester 2

- Engineering Mathematics 2
- Analogue Electronics
- AC Circuits
- Digital Fundamentals
- Engineering & Society
- Integrated Real-world Project 2
- Communication Essentials^
- Sports & Wellness^

Select your preferred diploma towards the end of your second semester and refer to the module listing in the respective diploma pages:

YEAR 2

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

YEAR 3

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

^ Interdisciplinary Studies (IS) modules account for up to 14 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 /

Refer to the Career section on the respective diploma pages.

/ FURTHER STUDIES /

Refer to the Further Studies 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
Mathematics (Elementary/Additional)	1-6
Science (with Physics, Chemistry or Biology component) or Biotechnology or Computing/Computing Studies or Design & Technology or Electronics/Fundamentals of Electronics	1-6

You must also fulfil the aggregate computation requirements.

* Candidates with English as a second language must have attained a minimum grade of 6.

Candidates with severe vision deficiency should not apply for the course. Those with colour vision deficiency may be considered, subject to an in-house test.

CONTACT US

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