At the forefront

Take on the future and be someone who infuses cutting-edge technology with practical operational value.

The School of Electrical and Electronic Engineering consistently ranks amongst top engineering education and research institutions around the world. At EEE, you can expect a holistic all-rounded education, made possible by a multifaceted curriculum that combines engineering with cross-disciplinary courses in the arts, business and humanities.
STUDENT-BUILT SATELLITE
NTU now has a total of six orbiting satellites that were successfully developed and launched between 2011 and 2015. Undergraduate students have been involved in the development process of our satellites.

UNMANNED AERIAL VEHICLE (UAV)
Our expertise in UAV was showcased at the 2014 Singapore Airshow, where 12 drones were flown in formation to execute complete indoor aerial manoeuvres – all within inches of each other!

With a strong focus on nurturing ideas and sparking innovation, here are some brilliant researches that have since been realised:

SPARKS OF BRILLIANCE

Come join us and let NTU’s B.Eng. (EEE) programme fulfil your maximum potential!
As one of the founding schools of NTU, the School of EEE offers advanced teaching facilities and an established research hub encompassing 16 research centres, 5 industry-linked labs, and 50 state-of-the-art laboratories. Coupled with a comprehensive curriculum, you can be assured of world-class training for your best effort forward!
A BROAD-BASED EXPERIENCE

Enjoy comprehensive exchange opportunities with over 300 partner universities in close to 40 countries!

Our partner institutions include:

– University of California, Los Angeles (UCLA)
– The Hong Kong University of Science & Technology
– McGill University
– Ecole Polytechnique Federale de Lausanne (EPFL)
– Georgia Institute of Technology
– Rensselaer Polytechnic Institute (RPI)
– University College London

To find out more, visit http://global.ntu.edu.sg/Pages/default.aspx

UNDERGRADUATE SATELLITE PROGRAMME

This programme provides an opportunity for students to participate in a multidisciplinary hands-on space project and strengthen their skills to support future Singapore’s space industry. Students are involved in the conceptualisation, design and prototyping of various subsystems and test systems of satellites.

ROLLS-ROYCE – NTU(EEE) UNDERGRADUATE EXPERIENCE PROGRAMME

Students will have the privilege to work in cutting edge Rolls-Royce@NTU Corporate Lab. Operating on a range of advanced equipment to implement over 20 projects, they partake projects that create innovations for future more-electric aircraft and more-electric ships.

INTERNSHIPS

Take on your own internship placement or let the Career & Attachment Office source an offer for you. Our programmes include:

– 20-week Professional Internship (PI)
– 10-week Professional Attachment (PA)

All Engineering students are required to complete a 20-week PI, with the exception of those on second major and double degree programmes, where they have the option of either PA or PI.

To find out more, visit http://www.ntu.edu.sg/cao/

UNDERGRADUATE RESEARCH EXPERIENCE ON CAMPUS (URECA)

This is an exclusive, university-wide undergraduate research programme that allows outstanding undergraduates to pursue independent research under a professor for 11 months. It provides a first-hand experience in research culture and benefits including stipends or academic units.

UNDERGRADUATE RESEARCH OPPORTUNITIES PROGRAMME (UROP)

2nd and 3rd year students are offered a research project under a professor for one semester. They can also opt to undertake the project with a renowned overseas institute under the International Research Attachment (IRA) scheme.

To find out more, visit http://www.eee.ntu.edu.sg/Programmes/CurrentStudents/undergraduate/undergraduatefull-time/Pages/StudentResearchProgrammes.aspx

GLOBAL PROGRAMMES

Enjoy comprehensive exchange opportunities with over 300 partner universities in close to 40 countries!

Our partner institutions include:

– University of California, Los Angeles (UCLA)
– The Hong Kong University of Science & Technology
– McGill University
– Ecole Polytechnique Federale de Lausanne (EPFL)
– Georgia Institute of Technology
– Rensselaer Polytechnic Institute (RPI)
– University College London

To find out more, visit http://global.ntu.edu.sg/Pages/default.aspx
Our broad-based Bachelor of Engineering (EEE) programmes, which are also offered with a Minor in Business, are well recognised and relevant across diverse industries and sectors.

**FULL TIME**

**BACHELOR OF ENGINEERING (EEE)**
A four-year EEE discipline programme that allows students to select one of these eight specialisations:

1. Biomedical Electronics
2. Communications Engineering
3. Computer Engineering
4. Digital Media Processing
5. Integrated Circuit Design
6. Intelligent Systems and Control Engineering
7. Microelectronics
8. Electrical Power & Energy

**DOUBLE-DEGREE PROGRAMME**

**BACHELOR OF ENGINEERING AND BACHELOR OF ARTS (HONOURS) IN ECONOMICS**
A five-year double discipline programme that provides a multi-dimensional view of the disciplines, and trains you to be nimble as a savvy economist and analytical as a competent engineer.

**INTEGRATED PROGRAMME**

**BACHELOR OF ENGINEERING AND MASTER OF SCIENCE IN AN ENGINEERING FIELD**
An exclusive fast-track programme for high-calibre students to complete both their Bachelor and Master degrees at an accelerated pace of 4.5 years. It offers incredible flexibility for those who wish to deepen their knowledge in a specific Engineering field. For more details, refer to: http://coe.ntu.edu.sg/Programmes/ProspectiveStudents/PS_Undergrad/PS_Programmes/Pages/IntegratedProgramme.aspx

*by invitation only

**SECOND MAJORS**

**BACHELOR OF ENGINEERING WITH A SECOND MAJOR IN BUSINESS**
A four-year double discipline programme that provides a competitive advantage and trains you to be well-versed in both technical and business perspectives.

**BACHELOR OF ENGINEERING WITH A SECOND MAJOR IN SOCIETY & URBAN SYSTEMS**
A four-year double discipline programme that provides a focused understanding and mastery of today's urban settings (culture, economy, social and policy work) and inter-weave with existing electrical engineering courses.

**PART TIME**

**BACHELOR OF ENGINEERING (EEE)**
Following closely the academic curriculum of the full-time Bachelor degree, this part-time programme is accredited by The Engineering Accreditation Board (EAB) of the Institution of Engineers Singapore (IES). Students must possess a polytechnic diploma in a relevant field of engineering or equivalent qualifications to be eligible for admission.

Application for part-time programme opens from December to January. For details, visit http://admissions.ntu.edu.sg/UndergraduateAdmissions/Pages/PTimeEng.aspx

**At A Glance**

- 4-YEAR PROGRAMME WITH CLASSES CONDUCTED IN THE EVENINGS
- POSСIBILITY OF CONVERSION TO FULL-TIME PROGRAMME
- SAME CONVOCATION WITH FULL-TIME STUDENTS
- SAME DEGREE AS THE FULL-TIME PROGRAMME

**AN ARRAY OF CHOICES**
The scope of career options for EEE graduates is vast and wide-ranging. Our graduates have landed in leading organisations across varied industries, including but not limited to:

**INFORMATION & COMMUNICATION**
- Autodesk, Centre for Strategic Infocomm Technologies, Infocomm Development Authority, Mediacorp, Nokia, NCS, Panasonic, Singtel and Tata Consultancy Services

**OILFIELD & GASFIELD**
- Aibel, FMC Technologies, McDermott, Schlumberger, Tri-Star Industries and WEG

**PUBLIC ADMINISTRATION & DEFENCE**
- Housing Development Board, Immigration & Checkpoints Authority of Singapore and the various Ministries and Armed Forces

**MARINE & OFFSHORE ENGINEERING**
- Keppel FELS, Sembawang Shipyard, Sembcorp Marine and ST Marine

**OILFIELD & GASFIELD**
- Albel, FMC Technologies, McDermott, Schlumberger, Tri-Star Industries and WEG

**PUBLIC ADMINISTRATION & DEFENCE**
- Housing Development Board, Immigration & Checkpoints Authority of Singapore and the various Ministries and Armed Forces

**MARINE & OFFSHORE ENGINEERING**
- Keppel FELS, Sembawang Shipyard, Sembcorp Marine and ST Marine

**MARITIME/SHIPPING**
- Jurong Shipyard, Keppel Shipyard, PCL Shipyard, PSA Corporation and PSA International

**SCIENTIFIC RESEARCH & DEVELOPMENT**
- A*Star, DSTA, DSO National Laboratories and Excelitas Technologies

**POWER AND CLEAN ENERGY**
- Senoko Energy, Singapore Power and SP Power Grid

**OTHER INDUSTRIES**
- British American Tobacco, ExxonMobil, Shell, P&G and Unilever

**BANKING & FINANCE**
- All major international financial institutions including Credit Suisse, Barclays, Singapore Exchange and local big three – DBS, OCBC and UOB

**MANUFACTURING**
- Foster Wheeler, National Instruments, Singapore Technologies, Voltrium Systems and Honeywell

**ELECTRICAL PRODUCTS**
- ABB, Creative Technology, Hitachi, IBM, Johnson Controls, Sony and Toshiba

**MANUFACTURING**
- Foster Wheeler, National Instruments, Singapore Technologies, Voltrium Systems and Honeywell

**MACHINERY AND EQUIPMENT**
- Continental Automotive and Siemens

**HEALTHCARE**
- National University Hospital, Singapore General Hospital and Parkway Health Group

**BANKING & FINANCE**
- All major international financial institutions including Credit Suisse, Barclays, Singapore Exchange and local big three – DBS, OCBC and UOB

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- Continental Automotive and Siemens

**HEALTHCARE**
- National University Hospital, Singapore General Hospital and Parkway Health Group
OUR BACHELOR OF ENGINEERING CURRICULUM AT A GLANCE:

THE JOURNEY AHEAD

FIRST YEAR
- Mathematics & Physics Foundation
- Introduction to Materials for Electronics
- Introduction to Engineering & Practices
- EEE Laboratory I
- Computing
- English Proficiency*
- Engineering Communication I
- Introduction to Sustainability: Multidisciplinary Approaches and Solutions
- Absolute Basics for Career
- GER Prescribed Electives 1 & 2
- Unrestricted Elective 1

SECOND YEAR
- Circuit Analysis
- Analog & Digital Electronics
- Semiconductor Fundamentals
- Engineering Mathematics I & II
- Signals & Systems
- Data Structures & Algorithms
- Introduction to EEE Design & Project
- Ethics & Moral Reasoning
- Unrestricted Elective 2

Polytechnic Diploma holders who are directly admitted to the second year are required to take: Mathematics A and Physics A, to strengthen their foundation for the degree programme.

THIRD YEAR
- Engineering Electromagnetics
- Microprocessors
- Design & Innovation Project
- Internships
- Technical Electives 1 & 2
- Enterprise & Innovation
- Career Power-Up!
- Unrestricted Elective 3

Depending on their specialisation, students shall choose two courses from the following:
- Electrical Devices & Machines
- Modelling & Control
- Power Systems & Conversion
- Integrated Electronics
- Introduction to Photonics
- Semiconductor Devices & Processing
- Communication Principles
- Computer Communications
- Digital Signal Processing

FINAL YEAR
- Final Year Project
- Design & Technical Electives
- Engineering Communication II
- Engineers & Society
- GER Prescribed Elective 3
- Unrestricted Electives 4 & 5

Students shall opt for elective courses in one of the following option groups:
- Electrical & Systems Engineering
- Electronic Engineering
- Infocommunications Engineering

Alternatively, students can opt to specialise in one of the following areas:
- Biomedical Electronics
- Communications Engineering
- Computer Engineering
- Digital Media Processing
- Integrated Circuit Design
- Intelligent Systems & Control Engineering
- Microelectronics
- Electrical Power & Energy

*Students who have at least a C6 in GCE 'A' Level General Paper and those who pass the Qualifying English Test are exempted.
WHERE YOUR FUTURE BEGINS

ADMISSION REQUIREMENTS

SINGAPORE-CAMBRIDGE GCE ‘A’ LEVEL
Passes in:
• H2 Level Mathematics and Physics/Chemistry/Computing/Biology
• H1 Level/GCE ‘O’ Level Physics or equivalent
• Applicable to applicants who have not read H2 or H1 Level Physics.

POLYTECHNIC DIPLOMA
Polytechnic Diploma holders or Final Year students with relevant diplomas from a local polytechnic in Singapore will be considered for direct entry into the second year.

Check out the list of acceptable diplomas at: https://wis.ntu.edu.sg/webexe/owa/adm_appl/relevant_diploma?student_type=F

INTERNATIONAL BACCALAUREATE DIPLOMA
Passes in:
• Higher Level Mathematics and Physics/Chemistry/Biology
• Standard Level Physics or equivalent
• Applicable to applicants who have not read Higher Level Physics.

NUS HIGH SCHOOL DIPLOMA
• Major CAP of 2.0 in Mathematics and Physics/Chemistry/Biology
• Overall CAP of 2.0 in Physics or equivalent
• Applicable to applicants who have not read Senior High School Level or IB Higher Level Physics.

INTERNATIONAL & OTHER QUALIFICATIONS
Students with international qualifications must have completed at least 12 years of general education or will be taking Year 12 national examinations in the year of application in order to be considered for admission.

Applicants must also have attained the following subject passes:
• Senior High School Level/IB Higher Level Mathematics and Physics/Chemistry/Biology
• Junior High School Level Physics
• Only applicable to applicants who have not read Senior High School Level or IB Higher Level Physics.

ADMISSION REQUIREMENTS

SINGAPORE-CAMBRIDGE GCE ‘A’ LEVEL
On a case-by-case basis, students with academic records of high merit may be granted exemption from a maximum of three courses including Mathematics and Physics.

POLYTECHNIC DIPLOMA
Students with academic records of high merit gaining direct entry to second year may be exempted from a maximum of three courses, which include Circuit Analysis, Mathematics A, Digital Electronics, or Analog Electronics.

For more information, please visit http://www.eee.ntu.edu.sg/Programmes/ProspectiveStudents/UG/EngEEEFT/Pages/CourseExemptions.aspx

SCHOLARSHIPS
Various scholarships are offered to new and existing students pursuing full-time undergraduate studies. These are awarded based on academic merit and outstanding cocurricular records.

Check out the list of scholarships for new undergraduates at: http://admissions.ntu.edu.sg/UndergraduateAdmissions/Pages/Scholarships.aspx

ACCREDITATION
Our programmes are accredited by the Engineering Accreditation Board (EAB) of the Institution of Engineers Singapore (IES), an eminent member of the reputable Washington Accord (WA). Hence, our degrees are recognised by all the signatory countries of the WA.
I participated in many events organised by the School of EEE which gave me opportunities to pursue my creativity and passion for Unmanned Aerial Vehicles (UAV). Engaging my peers of such technology, these opportunities inspired me to eventually pursue a career in Research and Development with DSO National Laboratories. EEE is truly a place where dreams become a reality.

Faith Foo, B.Eng (EEE)  
Class of 2015  
EEE Excellence Award 2015  
Research Engineer at DSO National Laboratories

EEE programme covers a wide spectrum of specialisations, and it is not a difficult task to find one that interests me. Dealing with control systems and robots has been my interest since young, and I am glad that I have a chance to study them in detail at NTU EEE. The broad-based curriculum also allows me to try out other interests while building a strong foundation in technical skills in my field of specialisation.

Chew Boon Jin  
EEE Undergraduate, Year 4  
EEE LEAD  
Alumnus of Nanyang Junior College

EEU EEE provided me with a holistic education that goes beyond academic excellence. I was honoured to be given opportunity to serve the student body as the EEE Club and Hall 3’s Vice President in my time in NTU. I was also granted the pleasure to work with A-Star for my Final Year Project which allowed me to learn beyond the academic boundaries. My exchange in Lund University, Sweden widened my horizons and left me with many memories I will hold dear to. I am very thankful for the exciting journey NTU EEE has paved for me.

Jade Wee  
IEM Undergraduate, Year 4  
EEE Club President 2015  
EEE LEAD  
Alumnus of Anglo-Chinese Junior College

Apart from knowledge gained from lectures, my enlightening weekly laboratory sessions topped up the experience and enriched me with hands-on skills. Constant engagement in school’s events has allowed me to widen my social circle and interact with peers from all walks of life. Having gone on 3 overseas trips for community projects and cultural exchange was definitely an eye-opening experience! They allowed me to reflect on the contributions I will be able to impart to the society with the skills I obtained from NTU.

Lim Yi Ying  
EEE Undergraduate, Year 3  
EEE LEAD  
Alumna of Singapore Polytechnic

EEE professors provided professional mentorships and helped me to better understand my strengths so as to benefit from it for my advantage. The skill set I had learnt in classrooms was always useful and practical for immediate use. The memorable internship with ST Electronics enabled me to acquire deeper analytical skills and gave me advanced standing in getting my desired job within two months after my graduation.

Richard Kong, B.Eng (EEE)  
Class of 2015  
EEE LEAD  
Assistant Manager (Web Service Management) at Ministry of Manpower

Apart from knowledge gained from lectures, my enlightening weekly laboratory sessions topped up the experience and enriched me with hands-on skills. Constant engagement in school’s events has allowed me to widen my social circle and interact with peers from all walks of life. Having gone on 3 overseas trips for community projects and cultural exchange was definitely an eye-opening experience! They allowed me to reflect on the contributions I will be able to impart to the society with the skills I obtained from NTU.

I did research on near space application, a low-cost alternative in replacing the present satellites in many applications, during my three-month internship at United States Air Force Academy, Colorado, Colorado Springs – High Altitude Balloon Research and Near Space Applications. I built and launched my very own research project to near space (above 100,000ft). The internship programme had given me the experience to work alongside many people from different countries, and provided me with relevant exposure to many different cultures and work ethics.

A Saravanan  
EEE Undergraduate, Year 4  
EEE Club President 2014  
Alumnus of Singapore Polytechnic