Bachelor of Engineering
(Electrical and Electronic Engineering)

One Degree, A World of Opportunities
A bachelor’s degree from EEE will open up a world of opportunities. Some industries EEE graduates can enter include:

### Jobs directly related to an EEE degree include:
- Electrical Engineer
- Electronics Engineer
- Embedded Systems Engineer
- Industrial and Production Engineer
- Industrial Machinery & Tools Engineer
- Information Technology Project Manager
- Information Technology Security Specialist

### Jobs in which an EEE degree would be useful include:
- Business Development Manager
- Management Consultant
- Project Manager
- Singapore Armed Forces Personnel
- Software, Web & Multimedia Developer
- Technical Sales Engineer
CORPORATE LABORATORIES

A Vast Advantage Of World-Class Facilities & Industry Mentors
Industry confidence in our programmes is instrumental in attracting some of the world’s biggest multinationals to set up corporate laboratories at NTU EEE for joint research.

OUR CORPORATE LABORATORIES OFFER STUDENTS AN OPPORTUNITY TO WORK IN A TOP-NOTCH ENVIRONMENT AND GAIN INSIGHT TO INDUSTRY TRENDS AND DEVELOPMENTS.

CUTTING-EDGE FACILITIES
MENTORING BY BOTH FACULTY AND CORPORATE LEADERS

Therefore students
GAIN HANDS-ON TECHNICAL SKILLS
WORK ON REAL-WORLD PROBLEMS

Joint research laboratories at NTU EEE:
• Rolls-Royce@NTU Corporate Lab
• SMRT-NTU Smart Urban Rail Corporate Lab
• ST Engineering-NTU Corporate Lab
• Delta-NTU Corporate Lab for Cyber Physical Systems
• Satellite Research Centre (SaRC)

GARAGE@EEE

A space where you can bring your ideas into fruition, with School’s mentorship and financial support.

IN THIS WHITE SPACE, STUDENTS CAN:
• dabble in particular topics of interest
• create or join existing teams to tackle larger problems
• apply for project funding to complete a longer design cycle leading to the development of a usable prototype

An Expansive Space for Ideas & Experimentation
Garage@EEE exists to cultivate a building culture and to bridge the gap between classroom and experiential learning.

GARAGE@EEE EQUIPS YOU WITH

- Hands-on skills
- Decision-making skills
- Communication & collaboration skills
- Project management experience
- Resilience & perseverance
- Entrepreneurial spirit
- Project funding & mentorship

Garage@EEE exists to cultivate a building culture and to bridge the gap between classroom and experiential learning.

Student Ambassadors of Garage@EEE
Our student ambassadors are passionate about promoting the maker spirit to the EEE/EM Community. From various hands-on workshops to a make-a-thon camp to the annual Freshmen Orientation Programme, there are endless possibilities to what one can do as part of the Garage@EEE Family.
EEE CLUB

A Rich Mix of Warm Care & Great Fun
The best of student welfare can be found at EEE Club, which looks after our students’ academic and non-academic needs. Yearly Exam Welfare Packs, interactive workshops and memorable events — including the annual Freshman Orientation Programme and EEE Family Day — are among the many things the Club does to spice up campus life, foster cohesiveness, and build bonds among EEE students.

EEE LEAD - LEADERSHIP ENRICHMENT AND DEVELOPMENT PROGRAMME

A Generous Scope For Advancing Talent
LEAD was set up to develop the leadership and managerial skills of talented EEE students. The programme will expose them to industry best practice and expand their professional network through guidance from external advisors. The community service and humanitarian work which they will participate in also create room for students to experience personal growth and satisfaction.

EEE OUTREACH AMBASSADORS

A Rewarding Role in Shaping The Future
The EEE Outreach Ambassadors was founded to serve as a bridge between the present and the future. The goal of the EEE Outreach Ambassadors is to reach out to prospective students and share with them the EEE story in hopes that they will become a part of our family. The Ambassadors serve as the face of EEE, participating in many events to interact with students and parents. There is much to gain in being an Outreach Ambassador. Leadership skills are honed with the many events organized by the committee such as Innovation Challenge, Induction Fiesta, and Open house. The Outreach Ambassadors plays a critical role in shaping the future of EEE.
A Broad Range of Inroads To Industry Experience
There is no better way to experience the ways of the world than through immersion. The School’s impeccable reputation is often an inroad to the companies that our students want to intern with. We also have a wide industry network from which students can secure their internships.

Our Internship Programmes Include:

**Professional Internship (PI)**
- 20 weeks
- Single-degree programme

**Professional Attachment (PA)**
- 10 weeks
- Second major and double-degree programmes

**Design & Innovation Project (DIP)** is an interesting and practical programme that allows students to explore innovative and creative solutions for engineering challenges. Through DIP, students will learn to design, develop, construct and test innovative electronic, electrical or IT prototypes in a group project environment.

6 Thematic Programmes Which Are Adapted From Current Technological Trends

**Smart Electronics**
- UAV applications
- Electromedical & Mobile computing

**Photonicics, Radar & Satellite Systems**
- Robotics
- Smart grids for renewable energy

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- Single-degree programme

**Professional Attachment (PA)**
- 10 weeks
- Second major and double-degree programmes

A Far-Reaching Network of Global Connections
Students at EEE have the advantage of enriching their education and life experience through the myriad global exchange programmes that we have with renowned partner universities. Students go beyond the classroom, build up life skills and develop new networks.

**_EXCHANGE PROGRAMMES_**

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**INTERNERSHIP PROGRAMMES**

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**Australia**
**Canada**
**China**
**Czech Republic**
**Denmark**
**Finland**
**France**
**Germany**
**Hong Kong**
**Norway**
**UK**
**USA**
**South Korea**
**Spain**
**Sweden**
**Switzerland**
**Taiwan**
**Turkey**

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** Foo Xiang Bing**
EEE Year 3
Currently in OGEM Explorer programme at University of Ottawa (Canada)

**Khor Kai Sherng**
EEE Year 3
Currently in research attachment at Massachusetts Institute of Technology (USA)
A DIVERSE PLETHORA OF OPTIONS & DIRECTIONS

Our Bachelor of Engineering curriculum at a glance:

FULL-TIME

BACHELOR OF ENGINEERING (EEE)
4-year direct-honours programme
Offered with a choice of specialisation

DOUBLE-DEGREE PROGRAMME
Bachelor of Engineering and Bachelor of Arts (Honours) in Economics
5-year double-discipline programme
For a multidimensional view of economics and engineering

SECOND MAJORS
Bachelor of Engineering with a Second Major in Business
4-year double-discipline programme
To gain the advantage of a business edge in engineering

Bachelor of Engineering with a Second Major in Society & Urban Systems
4-year double-discipline programme
To understand and master the engineering that empowers urban communities

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, such as the USA, the UK and Australia.

ADMISSION REQUIREMENTS

GCE "A" Level
Pass in H2 Level in Mathematics, and
Pass in H2 Level in Physics/Chemistry/Biology/Computing, and
Pass in H1 Level/GCE "O" Level Physics/ equivalent*

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

GCE "O" Level Physics is required for applicants who have not taken Physics at H2 or H1 Level.

**The list of acceptable diplomas is available at https://wis.ntu.edu.sg/webexe/owa/adm_appl_relevant_diploma?student_type=

FREE-TIME

THE B.ENG (EEE) CURRICULUM

FIRST YEAR

Mathematics 1 & 2
Physics
Physics Foundation for EEE
Introduction to Materials for Electronics
Introduction to Engineering & Practices
EEE Laboratory I
From Computational Thinking to Programming
English Proficiency*
Engineering Communication I
Sustainability: Seeing through the Haze
Engineers & Society
GER Prescribed Elective 1
Unrestricted Elective 1 & 2

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

SECOND YEAR

Circuit Analysis
Analog & Digital Electronics
Semiconductor Fundamentals
Engineering Mathematics I & II
Introduction to Data Science & Artificial Intelligence
Signals & Systems
Data Structures & Algorithms
Introduction to EEE Design & Project
Ethics & Moral Reasoning
GER Prescribed Elective 2

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

THIRD YEAR

Engineering Electromagnetics
Microprocessors
Design & Innovation Project
Internship
Technical Electives 1 & 2*
Engineering Communication II
Career Preparatory Course
Unrestricted Elective 3

*Students will choose courses depending on their specialisations.

FOURTH YEAR

Final Year Project
2 Design & 3 Technical Electives**
Enterprise & Innovation
GER Prescribed Elective 3
Unrestricted Elective

**Students can opt for a broad-based education under 3 main categories, or they can choose an in-depth study from 1 of 8 specialisations.
PROGRAMME ENQUIRIES
School of Electrical & Electronic Engineering
Nanyang Technological University
Block S1, 50 Nanyang Avenue
Singapore 639798
(65) 6514 1012 / 6790 5433
(65) 6792 0415
eee-outreach@ntu.edu.sg
NTUEEE

ADMISSION ENQUIRIES
School of Electrical & Electronic Engineering
Office of Admissions and Financial Aid
Nanyang Technological University
Student Services Centre, Level 3
42 Nanyang Avenue
Singapore 639815
dm_local@ntu.edu.sg (for local students)
adm_intnl@ntu.edu.sg (for international students)
http://admissions.ntu.edu.sg/UndergraduateAdmissions

NTUEEE
@NTUEEE

www.eee.ntu.edu.sg
NANYANG TECHNOLOGICAL UNIVERSITY

Ranked Number 1
Among the world’s best young universities
Ranked 12th in the world
QS World University Rankings 2018.

IEM is a 4-year multidisciplinary programme that provides students with a strong technical foundation in the engineering field and also enhances their creative potential through exposure to innovative processes.

BACHELOR OF ENGINEERING
(Information Engineering & Media)

WHERE TECHNOLOGY MEETS ART

SEEDING POSSIBILITIES IN VARIED CAREER FIELDS

NTU School of Electrical and Electronic Engineering (EEE) ranks 6th among electrical and electronic engineering schools worldwide in the QS World University Rankings by Subject 2017.

INFORMATION ENGINEERING & MEDIA (IEM)

This 5-year double-degree programme equips students with the extensive knowledge and expertise necessary for developing into engineer-economists. Graduates will have the skills and confidence to provide innovative engineered solutions to societal and environmental challenges in a rapidly changing global economy.

Bachelor of Engineering (IEM) and Bachelor of Arts (Economics)
Double-Degree Programme

This 4-year programme provides students with a solid combination of thorough technical and business knowledge and skills. This two-fold perspective creates graduates who are highly valued in the global marketplace and gives them the competitive edge with strong business fundamentals.

Bachelor of Engineering (IEM) with a Second Major in Business

DEVELOPING ENGINEERS FOR THE GLOBAL MARKET

YEAR 1
- Mathematics I & II
- Physics
- From Computational Thinking to Programming
- Data Structures & Algorithms
- Thinking & Communicating Visually I
- Engineers & Society
- Sustainability: Seeing Through the Haze

YEAR 2
- Introduction to Design & Project
- Engineering Mathematics I & II
- Software Engineering
- Microprocessors
- Computer Communications
- Signals & Systems
- Thinking & Communicating Visually II
- Theory of Visual Communication & Their Applications
- Art & Design Project I & II
- MRI (Meritorious Research Initiation)
- GER (Liberal Arts/Science, Technology & Society)
- Career Preparation Course
- Free Elective 1 & 2

YEAR 3
- Design & Innovation Project
- Professional Internship
- Digital Signal Processing
- Communication Principles
- Network Security
- Thinking & Communicating Visually III
- Engineering Communication II

YEAR 4
- Final Year Project
- Free Elective 3 & 4
- Enterprise & Innovation
- BSc (Business & Management)

YEAR 5
- Information Technology
- Web Application Design
- Embedded Systems
- Artificial Intelligence & Data Mining
- Multimedia Systems
- Computer Architecture
- Computer Networking
- Database Systems
- GER (Business & Management)
- Career Preparatory Course
- Free Electives 5 & 6

SPECIALISATIONS & ELECTIVES

- Information Technology
- Web Application Design
- Embedded Systems
- Artificial Intelligence & Data Mining
- Multimedia Systems
- Computer Architecture
- Computer Networking
- Database Systems

- Communications & Networking
- Global Communication Systems Design
- Telecommunication Systems
- Wireless Communications

- Digital Media Processing
- Video Systems
- Audio Signal Processing
- Image Processing
- Digital Audio Processing
- Multimedia Systems

- Visualisation & Interactive Media
- Virtual & Augmented Reality
- Visual Information Processing & Management
- Media Communication Technology
- Simulation & Modeling

Art, Design & Media Production
- 2D Design & Visualisation
- Audio in Media
- Interaction
- Interface Design
- Free Electives
GROWING TOMORROW’S BIG IDEAS

A learning laboratory, Garage@EEE serves as an informal resource to cultivate innovation and entrepreneurial spirit. Students can choose to dabble in particular topics of interest, create or join existing teams to tackle larger problems, or apply for funding to complete a longer design cycle leading to the development of a usable prototype. Empowering students to take ownership of their own learning, the lab exists to cultivate a building culture and bridge the gap between classroom and experiential learning.

The mentorship and resources available in our Garage@EEE innovation lab are designed to equip you with:

- Design-Making Skills
- Hands-On Skills
- Resilience and Perseverance
- Project Management Experience
- Communication and Collaboration Skills
- Entrepreneurial Spirit

CULTIVATING GLOBAL CONNECTIONS

Our strategic partnerships with renowned overseas universities allow our students to extend and enrich their educational experience, developing diverse knowledge and global experience that will last a lifetime.

Australia  
Canada  
China  
Czech Republic  
Denmark  
Finland

France  
Germany  
Hong Kong  
Norway  
UK  
USA

South Korea  
Spain  
Sweden  
Switzerland  
Taiwan  
Turkey

GENERATING SOLUTIONS FOR A SMART FUTURE

The IEM Design & Innovation Project (DIP) is an interesting and practical programme that allows students to explore innovative and creative solutions for engineering challenges. Through DIP, students will learn to design, develop prototypes, and test innovative electronic, electrical, or IT products in a group project environment.

MORE INFORMATION

School of Electrical & Electronic Engineering  
Nanyang Technological University  
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iemonline@ntu.edu.sg

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