School of Electrical and Electronic Engineering
ELECTRICAL AND ELECTRONIC ENGINEERING

One of the 3 founding schools

7 core areas ranging from power engineering, circuits & systems, information engineering, control & instrumentation, communication engineering, microelectronics to information communication.

Over 220 academic staff

Twelve advanced research centres

Technical Excellence, spanning a broad range of technology from Nanomaterials and Microelectronics to Communications and Satellites
OUR VALUES

Passion for excellence

Teamwork and co-operation

Life-long learning and Discovery

Contribution to Society

Dedication and Perseverance

Professional Integrity
OUR VISION

To be a World Class Centre of Excellence for Electrical and Electronic Engineering and Technological Innovation

OUR MISSION

To excel in Teaching, Research and Professional Services in Electrical & Electronic Engineering and to contribute to Technological Innovation and Economic Advancement of the Nation

Professor Kam Chan Hin
Dean
School of EEE
Our 4-year DIRECT HONOURS degree course admits students based on ‘A’ level results or equivalent qualifications. Suitably qualified polytechnic diploma holders can be admitted to the 2nd year of the course.

Our primary OBJECTIVE is to provide professional training to prepare you to play an important role in industry soon after graduation. The curriculum is designed to achieve integration of fundamental theory with current engineering practices. Besides lectures and tutorials, you attend design classes to develop your ability to synthesize engineering systems. In the final year, you work on a major project to further enhance your practical engineering skills.

Our CURRICULUM strikes a judicious balance between breadth and depth, providing a solid foundation in mathematics, physical sciences and broadening subjects under the General Education Requirement for a comprehensive education in electrical & electronic engineering. We believe this broadbased training will provide flexibility of career choices and nurture lifelong learning.
**EEE PROGRAMME**

**FIRST YEAR**
- English Proficiency*
- Mathematics I
- Mathematics II
- Physics I
- Physics II
- Chemistry
- Computer
- Materials Science
- Life Sciences
- Laboratory 1A
- Laboratory 1B

* Students who have at least B4 in OCE A Level General Paper and those who pass the Qualifying English Test are exempted.

**SECOND YEAR**
- Engineering Mathematics I
- Engineering Mathematics II
- Data Structures & Algorithms
- Circuit Analysis
- Analog Electronics
- Digital Electronics
- Semiconductor Fundamentals
- Signals & Systems
- AC Circuits & Machines
- Laboratory 2A & 2B
- Design Innovation Project (DIP)

Five-week Compulsory placement at full-time faculty level EEE students.

**THIRD YEAR**
- Engineering Electromagnetics
- Microprocessors
- Integrated Electronics
- Laboratory 3
- Project

**I(1)OE/E/IRA**

Students may opt for a 23-week Industrial Attachment (IA), 10-week Industrial Orientation (IO), 20-week Enhanced IA (EIA) or 20-week Industrial Research Attachment (IRA). Placements within Industry, students in the schools further details can be found at http://www.ntu.edu.sg/DAE/Pages/default.htm.

Depending on specialization, choose 2 to 3 subjects:
- Modeling & Control
- Communication Principles
- Power Systems & Conversion
- Semiconductor Devices & Processing
- Optics
- Computer Communications
- Digital Signal Processing

**FINAL YEAR**
- Digital Signal Processing
- Integrated Electronics
- Software Engineering
- Final Year Project

The final year project is carried out over two semesters. Students can opt for either a broad based electrical and electronic engineering programme.

Off one of 11 areas of specialization:
- Biomedical Electronics
- Communication Engineering
- Computer Engineering
- Electronics
- Information & Communication Technology
- Integrated Circuit Design
- Intelligent Systems Engineering
- Nanoelectronics
- Multimedia Signal Processing
- Photonics
- Power Engineering

(Note: Curriculum is subject to change.)

Further information on the curriculum is available in the School’s website at http://www.ntu.edu.sg/eee/academics/
**EXEMPTIONS**

**“A” LEVELS**
A-level students with very good academic records may be exempted from a maximum of three subjects which may include Mathematics I, Physics I or II, Economics and Chemistry. Exemption will be granted on a case-to-case basis.

**POLY STUDENTS**
Direct entry Polytechnic students with very good academic records may be exempted a number of subjects which include Circuit Analysis, Basic Engineering Mathematics and Analogue Electronics. A list of the recognized diplomas and the details for exemption are available at our Office of Admissions’ Website: [http://www.ntu.edu.sg/OAD/Admissions/](http://www.ntu.edu.sg/OAD/Admissions/)

**SCHOLARSHIPS**
In recognition of academic excellence and leadership potential, NTU offers a variety of scholarships to new as well as existing students pursuing their full time undergraduate studies in NTU. Scholarships are generally awarded to students based on academic merit and good co-curricular records. The list of Scholarships for New Undergraduates is available for download from [http://www.ntu.edu.sg/oa/scholar_freshmem/scholarships_new.htm](http://www.ntu.edu.sg/oa/scholar_freshmem/scholarships_new.htm).

EEE students can also apply for a scholarship under the IC Design Specialist Manpower Programme (SMR). The SMR Scholarship is meant for undergraduates who take the IC Design specialization and an Industrial Attachment with a sponsoring company. Interested candidates can email Assoc Prof Vincent Ong at evplmail.ntu.edu.sg. Further information is available at [http://www.ntu.edu.sg/eee/academic/](http://www.ntu.edu.sg/eee/academic/)

**PART-TIME BACHELOR OF ENGINEERING PROGRAMME**
This programme caters specially to those who have diplomas from polytechnics or equivalent qualifications. It has the following attractive features:
- Similarities with the full-time programme except that it ranges over a period of candidature of 4 - 8 years
- Classes in the evenings
- Possibility of conversion to the full-time programme

Visit us at [http://www.ntu.edu.sg/eee/academic/part_time](http://www.ntu.edu.sg/eee/academic/part_time)

**FINANCIAL ASSISTANCE**
Financial Assistance Schemes provide relief in the form of loans and bursaries for Full-Time Matriculated NTU Undergraduates to cover tuition fees and/or living expenses.

**EMPLOYMENT OPPORTUNITIES**
Upon graduation, you can look for a career in diverse areas. Most EEE graduates are employed by local or multinational corporations. Some of our graduates have ventured out to start up their own companies. As EEE provides an all-round education for students, our graduates are employed by a wide range of companies:
- IC manufacturing industries
- Semiconductor industries
- Power generation and distribution companies
- Engineering firms
- Internet service providers
- Telecommunication service providers
- Financial institutes

To find out more about career opportunities available, visit the EEE Alumni website at [http://www.ntu.edu.sg/eee/alumni/links.asp](http://www.ntu.edu.sg/eee/alumni/links.asp)

**ACCREDITATION**
Our Bachelor of Engineering in Electrical & Electronic Engineering degree is well recognized internationally, including by Professional Bodies of overseas countries to the Washington Accord. It is accredited by:
- The Institution of Electrical Engineers (IEE) of the United Kingdom, and
- The Engineering Accreditation Board (EAB) set up by the Institute of Engineers, Singapore and the Professional Engineers Board
Zhang Lesheng, a Master of Science (M.Sc) student of the School of Electrical and Electronic Engineering (EEE) has been writing Mandarin lyrics for MediaCorp dramas since October 2003. His lyrics were used in about 8 drama serials, including popular ones like Double Happiness and Ode to Life.

EEE develops award winning biomedical chip that detects cancer from a drop of blood

World’s Smallest Transformer

Researchers from EEE developed the world’s smallest transformer for electronic devices. This innovation enables devices such as mobile phone and wireless network adapters to be made smaller, cheaper and more feature-packed.

IES Prestigious Engineering Achievement Award 2005

Professor Er Meng Hwa, Deputy President and Professor of EEE

First Singaporean to be made an honorary fellow of the renowned institution of Electrical Engineers

Team members from left to right: Adj A/P Zhang Ying, Li Hao, Prof Soh Yeng Chai, Kok Shaw Wei, Wang Qi and A/P Wen Changyun
DISCOVER YOUR POTENTIAL.
REALIZE YOUR REACH!

Visit us  @  http://www.ntu.edu.sg/eee

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