ELECTRICAL ENGINEERING
Nurturing Holistic Engineers, Impacting Lives
What is Electrical Engineering?

Electrical engineering is about innovation and creation of services and technology to address multifarious key engineering issues that societies face today. It is grounded in the principles of the sciences and mathematics. Electrical engineering is inarguably the driving force behind most modern inventions, which provide the intelligent technology platforms needed to address complex global challenges such as ageing population, healthcare, mobility and energy sustainability. Electrical engineering is thus a discipline that has plenty to offer in terms of discovery, innovation and creativity.

NUS Electrical Engineering is designed to develop versatile engineers for immediate employment and to prepare them to meet the challenges of modern society. The programme has strong emphasis on scientific and engineering fundamentals and a high degree of flexibility, which can provide a diversity of educational experiences. It provides a mix of education and research opportunities, which are unique in its diversity and richness, allowing the students to plan their individual educational experience in accordance to their career aspirations.
**Specialisations**

**COMMUNICATIONS & NETWORKS**
Technologies and concepts that allow computers and other devices to interconnect and exchange information. Introduces students to the fundamentals of computer networks such as the Internet as well as cellular and mobile communication.

**CONTROL, INTELLIGENT SYSTEMS & ROBOTICS**
Systems & control, computational & machine intelligence and autonomous robotic technology with applications in precision engineering and manufacturing, healthcare and transportation.

**INTEGRATED CIRCUITS & EMBEDDED SYSTEMS**
Analogue/RF, digital and mixed-signal integrated circuit design, MEMS and embedded system with applications in biomedical engineering and IoT.

**MICROELECTRONIC TECHNOLOGIES & DEVICES**
The manipulation and control of electrons, photons and spin at the nanoscale for daily-use devices from mobile phones, cars, ships, computers to big data storages.

**MICROWAVE & RADIO FREQUENCY**
Design of communication system front-ends, supporting all wireless systems including IoT, biometrics, satellite, and remote sensing and control.

**POWER & ENERGY SYSTEMS**
Focuses on the knowledge and understanding of various components, sub-systems and overall power system for generation, transmission and distribution and ultimate utilisation that is sustainable.

**SIGNAL ANALYSIS & MACHINE INTELLIGENCE**
Focuses on the areas of medical image processing, computer and human vision, speech and language processing, digital media, human computer interaction, and fundamentals of machine learning.
Career Prospects

The NUS Electrical Engineering programme prepares graduates to be versatile, thinking individuals, well-versed in fundamentals and capable of presenting a good balance of engineering skills and knowledge applicable across many industries.

Career prospects for our electrical engineering graduates are wide and varied:

- **Aerospace & Aviation**: Rolls-Royce, SIA Engineering
- **Automotive**: Bosch, Continental, McLaren Applied Technologies
- **Chemicals**: ExxonMobil, Shell
- **Consumer Business**: Procter & Gamble
- **Control & Automation**: Hexagon, Seagate Automation, Siemens, Yokogawa
- **Electronics & Semiconductors**: GlobalFoundries, MediaTek, Micron, ST Electronics
- **Energy, Oil & Gas**: ConocoPhilips, Schlumberger, Singapore Power
- **Finance & Investment**: DBS, GIC, Goldman Sachs
- **Infocommunications**: M1, Singtel, Starhub, Vodafone
- **Logistics & Supply Chain Management**: DHL, FedEx, PSA
- **Marine & Offshore**: Keppel Offshore & Marine, Sembcorp Marine
- **Media & Digital Entertainment**: Mediacorp, Sony Singapore
- **Medical Technology & Healthcare**: iHiS, Medtronic, Philips Healthcare
- **Precision Engineering**: Advantech, Akribis, Makino

“Hexagon Manufacturing Intelligence, a leading company in CAE, CAD/CAM, metrology solutions as well as quality management software, values graduates from NUS Electrical and Computer Engineering for their training in software, and electrical and electronics hardware.”

Lim Boon Choon  
APAC President,  
Hexagon Manufacturing Intelligence

“Given competition from other sectors, hiring quality engineers is a challenge for any company. NUS Electrical and Computer Engineering is producing quality engineering students and graduates. I think looking forward, these NUS Electrical and Computer Engineering graduates will be able to fulfil the industrial needs of Singapore.”

Amit Gupta  
Chief of Rolls-Royce Electrical Singapore,  
Applied Technology Group,  
Rolls-Royce Singapore Pte Ltd
Words from our Graduates

NUS Engineering’s array of exciting courses allowed me to pursue my passion in both technology and film, giving me an edge to pursue my dreams in the ever-changing digital media economy!

Derek Tan, Class of 2009
Co-founder, Viddsee

NUS Electrical and Computer Engineering gave me the chance to explore a variety of disciplines and not just engineering. For example, I obtained a minor in Technopreneurship and had the opportunity to go overseas to France for a Double Degree Programme.

Eng Se Hsieng, Class of 2003
Head of Internet of Things Northern Europe, Vodafone IoT

The four years spent at NUS Engineering gave me the chance to strengthen my critical thinking and analytical skills. At the same time, it was a great place to build connections and meet new friends; some of whom are my business partners today!

Jerome Wong, Class of 2001
Chief Operating Officer, clickTRUE

NUS Electrical and Computer Engineering laid the foundation of skills that I need for work. Work is not a scaled version of school where I merely do the same work on a different scale. What I do every day is to practise and hone the skills that I have picked up in school. To analyse a complex problem from multiple perspectives and recommend a solution, to learn quickly and apply the knowledge gained, to explain technical concepts simply - these are some of the skills that I picked up at NUS Electrical and Computer Engineering, and practise every day at work.

Chan Wai Cheung, Class of 2017
Management Associate, NEC Asia Pacific