ELECTRICAL ENGINEERING

- Audio-visual Technology (N76)
- Electrical Engineering (N43)
Strong culture of design & development and innovation, with award-winning national projects

Total learning experience within and beyond classroom made possible through conducive environment, caring staff and global-oriented curriculum

Highly practical hands-on training throughout the course that culminates in 6-month Industrial Attachment Programme or Design Project
Electricity, electronics, computers, audio-visual systems – it is hard to imagine any modern industry that can do without them. They are at the heart of many industries including aerospace, biomedical, communications, arts and entertainment, media, tourism and financial services.

At the Electrical Engineering (EE) Division, we empower a new generation of technologists who are flexible and have broad-based skills – able to meet the demands of the rapidly changing global economy. Engineering management, electronics engineering, computer & networking, power engineering, solar technology, and audio-visual technology, are just some of the fields of study. You can look forward to a broad-based core curriculum, which is complemented by specialisations, to pave your way to various career choices.

In the Information Age, it is no longer tenable to confine learning to the classroom. At EE you will experience ‘Total Learning’ that comes with a whole host of off-campus programmes besides the core curriculum. These include the Overseas Industrial Attachment Programme (OIAP), community service projects, study trips, adventure camps and many others that broaden your perspective, impart lifeskills and transform you into a global knowledge worker.

A key aspect of ‘Total Learning’ is learner-centered learning where you take ownership for your own learning. Learning takes place anywhere, anytime with Mobile eLearning (MeL). We will bring you up to speed on the latest technologies with our state-of-the-art facilities. EE’s strong partnerships with industry leaders will also ensure that the curriculum stays relevant.
A Culture of Innovation

Innovations abound in the School of Engineering. An outstanding example is the Smart Bed – currently on trial in Alexandra, Tan Tock Seng and Changi Hospitals. The Smart Bed reduces falling rates in wards by predicting when a patient is about to get out of bed. The Smart Bed is now commercially produced by Plentum Care (S) Pte Ltd.

Fancy switching on the TV or sounding an alarm during an emergency with the twitch of an eyebrow? Impossible? Think again. A novel system developed by three Electrical Engineering graduates did just that. Thanks to them, paralysed or stroke patients can now lead safer and better quality lives. The invention gives a whole new meaning to the expression “raising an eyebrow”.

With our strong tradition of fostering innovation, design and development, we have won numerous local and international awards in Greenwave Competition 2006, Trinity College Fire Fighting Robot Contest, Tan Kah Kee Young Inventors’ Award 2007, Creatively Mine contest, IES Design Award, World Skills Competition etc. Our students have also created their own products and patents.

The EE Division comes under the School of Engineering, which also includes Electronic & Computer Engineering, Building & Environment, Multidiscipline Engineering, and Mechanical Engineering.

For details, log on to http://soe.np.edu.sg/soe/ee
When you graduate and as you move up the career ladder, you will most likely assume roles that require more than what you have learnt as an engineer. You will change jobs a few times, and like many engineers, take on management roles and switch to jobs in entirely new fields.

To help you become More Than An Engineer, the School of Engineering (SoE) is excited to offer you a radically different curriculum structure that spells: **More Choices, Greater Flexibility, and Broader Career Opportunities!**

This revolutionary broad-based curriculum offers flexibility - breaking away from the limitations that come with the traditionally structured approaches of many engineering courses offered elsewhere.

So, join us and be plugged into the new exciting world of engineering where:

- You can customise your final-year options/electives from a wide range of categories to meet your career aspirations
- You can choose non-engineering options such as Business Management and Marketing & Entrepreneurship, to give you a leg up into the fast growing service and business sectors
- You graduate with more than just a Diploma. You can also choose to take up Diploma Plus and/or Enhancement Certificates depending on your abilities and interests

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**multi-engineering foundation**

The Engineering Common Programme (ECP) (N71) is the way to go if you are keen on engineering but need more time to decide which course is suitable for you.

Delay your decision for one semester to gain a better appreciation of the careers that the various engineering diplomas can offer. At the end of the semester, after you have discovered your specific area of interest, you can join one of the following nine engineering diploma courses:

- Aerospace Electronics (AE)
- Aerospace Technology (AT)
- Audio-visual Technology (AVT)
- Biomedical Engineering (BME)
- Electrical Engineering (EE)
- Electronic & Computer Engineering (ECE)
- Mechanical Engineering (ME)
- Marine & Offshore Technology (MOT)
- Mechatronic Engineering (MTE)
Diploma in Audio-visual Technology

- Plug into the entertainment, MICE and IR industries as audio-visual technologists or audio-video technical professionals
- Attachments with leading players like Esplanade and MediaCorp, as early as the end of the first year
- Best of both worlds - combines the best of technical and arts & entertainment education
About the Diploma

What does it take to make Gwen Stefani’s concert here a roaring success? What makes the IMF meetings successful? Ever wanted to be part of the team responsible for mega concerts like Live Earth and WOMAD?

Now you can, with the Diploma in Audio-visual Technology! Learn skills to meet the demand for state-of-art stage, lighting & recording equipment and audio-visual systems, and enter the entertainment and MICE (Meetings, Incentives, Conventions and Exhibitions) industries as an audio-technologist or an audio-video technical professional. Your education will allow you to support world-class facilities like the Integrated Resorts (IR) and Esplanade. You might even be able to design the next iPod or Wii!

Our three-year course trains you in video-conferencing and streaming, live performance system integration and management, stage lighting, live sound control and digital media applications. Our new laboratories have up-to-date facilities and equipment so you can be trained in the latest media technology including top-end hi-fi sound and stage equipment. A strong emphasis on hands-on training allows you to go on an optional attachment with leading players like Esplanade and MediaCorp as early as your first year.

Get the best of a well-balanced curriculum covering theoretical, practical and artistic education, with one diploma! Supporting studies are offered in the electrical, electronics and computing disciplines, as well as skills like entrepreneurship, communication and innovation.

Choose between a design project or a six-month full-time industrial attachment in your final year. Both programmes are platforms that will allow you to express your passion and ideas; and promote innovative thinking, adaptability and independent learning.
School of Engineering Electives
Choose your electives and customise your selection from a wide range of modules from engineering and non-engineering categories. See page 14.
What can you achieve in your career?

Work as an audio-visual technologist or an audio-video technical professional. Upon graduation, your audio-visual expertise could well land you a job in the MICE, arts and entertainment, audio video consumer electronics or broadcast and multimedia industries.

Your potential employers are the Esplanade, MediaCorp, Singapore Association of Convention & Exhibition Organisers & Suppliers, event production companies such as TheShowCompany, Philips, Pioneer, JVC Fujitsu... not to mention exciting careers in world-class hotels, integrated resorts, audio-video consultancy services, equipment supply, advertising, education and theme parks.

Further Studies

The diploma will open doors for you, allowing you to pursue further education in local and overseas universities. Specialised degree programmes on audio-visual, broadcast or digital media technology will help you go further in your career. Supporting studies in electrical, electronic and computer engineering will allow you to enter such degree courses.

Entry Requirements

To be eligible for consideration, candidates must have the following GCE ‘O’ Level examinations (or equivalent) results:

<table>
<thead>
<tr>
<th>Subject</th>
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</tr>
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<td>English</td>
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The aggregate computation for selection is based on grades obtained for English, Mathematics, Science or Design & Technology and two other subjects.

** Candidates with English as a second language (EL2) must have attained a minimum grade of 6.

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

- Electrical Engineering is the backbone technology of diverse industries
- One of the most flexible diplomas that is in high demand - opening doors to various career choices
- Specialisation options in Power Engineering, Electronics, Data and Network Systems, and Engineering Management
- A new Solar Technology option - launched in response to Singapore's development as a clean energy hub, with focus in Solar Technology development
- Attachments with established partners like ST Aerospace and Power Grid Ltd
About the Diploma

Have you ever marvelled at how Changi Airport operates – with lights, changing information displays and massive security systems to back it up?

Now imagine having the power to keep these running smoothly. You can, with the Diploma in Electrical Engineering (EE) – one of the most flexible diplomas that will plug you into a wide range of careers. Your training in electrical, electronic and computer engineering will allow you to manage modern power systems, as well as sophisticated electronic and computer systems. With electrical engineering forming the backbone technology of diverse industries like electricity, electronic, aerospace, biomedical, communications, arts and entertainment, tourism and financial services – you have greater career choices!

In the final year, you have the option to specialise in one of these options:

- power engineering
- electronics
- data and network systems
- engineering management
- solar technology (New!)
- business management (New!) (non-engineering)
- marketing and entrepreneurship (New!) (non-engineering)

Work on a full-time design project or join a local or overseas attachment programme. This will boost your confidence, innovative and entrepreneurial spirit. The design projects will allow you to enhance your research and product development skills and enable you to create products and patents. You can even take part in competitions to showcase your talent. Attachment programmes will allow you to train with industry leaders like ST Aerospace, and PowerGrid Ltd. Go beyond your comfort zone when you work in China, Thailand, Malaysia and Australia. To further enrich your educational experience, you can participate in youth expeditions, nature camps, national and international competitions.
"The education at EE has not only opened my eyes to a vast amount of technical knowledge relevant to the industry, but also opened up doors in other sectors, thanks to the broad-based education we received."

– Huang Hansheng (EE graduate)
National Youth Achievement Award and Ministry of Education Scholarship recipient
Year 3

**Data & Network Systems Option**
- Internetworking
- Wireless LAN Technologies
- Distributed Control Systems

**Electronics Option**
- Electronic System Design
- Embedded System Design
- Power Electronics

**Engineering Management Option**
- Engineering Contract & Project Management
- Power System Economics & Energy Market
- Electrical Installation Design

**Solar Technology Option**
- Solar Cell Technology
- Photovoltaic Technology
- Design & Operation of Photovoltaic Systems

**Power Engineering Option**
- Electrical Installation Design
- Power Distribution & Protection
- Control & Automation

**Business Management Option**
- Customer Relationship Management
- E-commerce
- Service Operation Management
- 1 module from Marketing & Entrepreneurship option

**Marketing & Entrepreneurship Option**
- Business Creation
- Enterprise Development
- Product Design and Marketing
- 1 module from the Business Management option

In addition to the modules in the various options, students take these IS modules:
- World Issues: A Singapore Perspective
- Any 1 IS general module

Students can opt to go for Industrial attachment or take on a design & development project.

- Interdisciplinary Studies (IS) modules

**School of Engineering Electives**
Choose your electives and customise your selection from a wide range of modules from engineering and non-engineering categories. See page 14.
What can you achieve in your career?

Upon graduation, you may apply for the Electrical Technician Licence, which is recognised by the Energy Market Authority. This will be an asset when working in or starting your own electrical contracting business.

Enter into a variety of industries such as electricity consultancy, aerospace, media, arts and sciences, biomedical, high-tech manufacturing, computer networking and world-class resorts.

Our graduates readily find employment with good starting salaries right after graduation. Many have since risen to managerial positions or become entrepreneurs.

Further Studies

Our graduates are accepted into top local and overseas universities for further studies. Our courses are recognised and accepted by Nanyang Technological University (NTU), National University of Singapore (NUS), and Singapore Management University (SMU). You can enjoy direct entry into the second year for related engineering courses in NTU and NUS. Your diploma also enables you to apply for other degree programmes like business, accountancy, and arts and sciences.

The University of Manchester, Imperial College, University of Sheffield, University of New South Wales and Queensland University of Technology are just some of the overseas universities where you can study. Obtain credit exemptions or direct entry into the second or third year in leading universities in Australia, Canada, United Kingdom and United States.

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You will take two elective modules to complete your diploma. Choose your elective modules from a wide range of clusters available under both engineering and non-engineering categories.

You want more? Just top up with two additional elective modules. If any three of the four elective modules completed are from the same cluster, you will qualify for a Diploma Plus!

The Diploma Plus will better prepare you if you wish to pursue a university degree or increase your employability in discipline-specific areas.

**Engineering Category**
- Advanced Engineering Mathematics Cluster*
- Applied Physics Cluster*
- Biomedical Engineering Cluster
- Electrical Control & Measurement Cluster
- Industrial Control Cluster
- Industrial Electronics Cluster
- Information Technology Cluster
- Mechanical Technology Cluster
- Stage Management and Technology Cluster
- Telecommunication Distribution Technology Cluster

**Non-Engineering Category**
- Economics & Financial Applications Cluster
- Green Development Cluster
- Leisure & Retail Management Cluster

**Other Available Diploma Plus Certificates**
- Business
- Innovation Management
- Languages (Japanese)

*Designed in collaboration with the Department of Electrical and Computer Engineering, National University of Singapore (NUS). The syllabus is based on the first-year engineering mathematics and science curricula of NUS.*
If you took the 2007 GCE ‘O’ Level examinations as a school candidate, you may apply on-line through the Joint Admissions Exercise (JAE). Details will be available in the JAE information booklet which you will receive when collecting your results.

Applicants who are not eligible to apply under the JAE and holders of other qualifications may refer to our website at http://www.np.edu.sg/aa/info.html for application details.

Fees
S$2,100 per academic year (for local students)