EEE

Bachelor of Engineering
(Electrical and Electronic Engineering)

One Degree, A World of Opportunities

ELECTRICAL & ELECTRONIC ENGINEERING

1st
ELECTRICAL & ELECTRONIC ENGINEERING SCHOOL IN ASIA*

6th
AMONG ELECTRICAL & ELECTRONIC SCHOOLS WORLDWIDE*

*Based on the QS World University Rankings by Subject 2019

PROGRAMMES WE OFFER:
- Bachelor of Engineering in Electrical and Electronic Engineering (EEE)
- Double Degree in Bachelor of Engineering (EEE) and Bachelor of Arts (Economics)
- Bachelor of Engineering (EEE) with a Second Major in Business
- Bachelor of Engineering (EEE) with a Second Major in Society and Urban Systems

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**

*Pass in 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=

SPECIALISATION:

- BIOMEDICAL ELECTRONICS
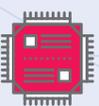- INTELLIGENT SYSTEMS & CONTROL ENGINEERING
- ELECTRICAL POWER & ENERGY
- INTEGRATED CIRCUIT DESIGN
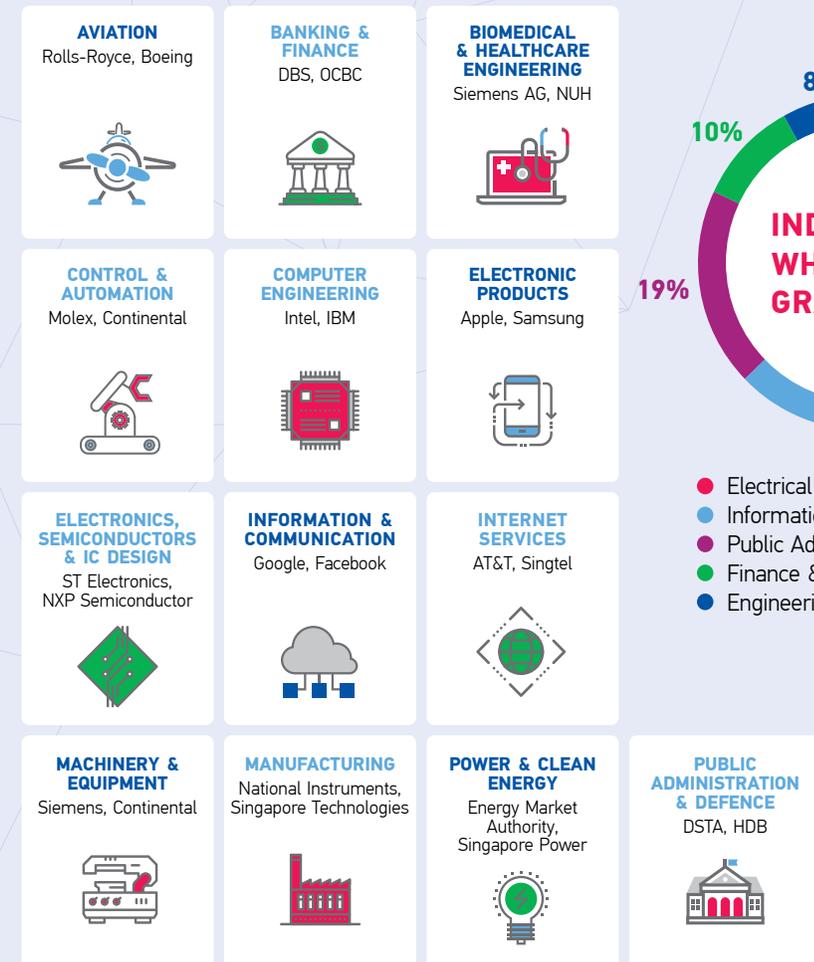- MICROELECTRONICS
- COMMUNICATION ENGINEERING
- COMPUTER ENGINEERING
- DATA INTELLIGENCE & PROCESSING

CAREER PROSPECTS FOR EEE

A bachelor's degree from EEE will open up a world of opportunities. Some industries EEE graduates can enter include:

AVIATION
Rolls-Royce, Boeing

BANKING & FINANCE
DBS, OCBC

BIOMEDICAL & HEALTHCARE ENGINEERING
Siemens AG, NUH

CONTROL & AUTOMATION
Molex, Continental

COMPUTER ENGINEERING
Intel, IBM

ELECTRONIC PRODUCTS
Apple, Samsung

ELECTRONICS, SEMICONDUCTORS & IC DESIGN
ST Electronics, NXP Semiconductor

INFORMATION & COMMUNICATION
Google, Facebook

INTERNET SERVICES
AT&T, Singtel

MACHINERY & EQUIPMENT
Siemens, Continental

MANUFACTURING
National Instruments, Singapore Technologies

POWER & CLEAN ENERGY
Energy Market Authority, Singapore Power

PUBLIC ADMINISTRATION & DEFENCE
DSTA, HDB

TOP 5 INDUSTRIES WHERE OUR GRADUATES EXCEL

- 33% — Electrical Products
- 30% — Information & Communication
- 19% — Public Administration & Defence
- 10% — Finance & Business
- 8% — Engineering Manufacturing

EEE CURRICULUM AT A GLANCE

1st YEAR
Mathematics 1 & 2
Physics
Physics Foundation for EEE
Introduction to Engineering & Practices
EEE Laboratory I
Engineers & Society
Introduction to Computational Thinking

2nd YEAR
Circuit Analysis
Analog & Digital Electronics
Semiconductor Fundamentals
Engineering Mathematics I
Introduction to Data Science & AI
Signals & Systems
Data Structures & Algorithms
Introduction to EEE Design & Project
Electrical Devices & Machines

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.

3rd YEAR
Engineering Electromagnetics
Microprocessors
Design & Innovation Project
Internship
Technical Electives 1 & 2**
Engineering Mathematics II

4th YEAR
Final Year Project
2 Design & 3 Technical Electives**

** Students will choose courses depending on the specialisation.

For more information

DESIGN & INNOVATION PROJECT

The EEE Design & Innovation Project (DIP) is a 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.

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THEMATIC PROGRAMMES
WHICH ARE ADAPTED FROM CURRENT TECHNOLOGICAL TRENDS

- SMART ELECTRONICS
- ROBOTICS
- MACHINE LEARNING & DATA ANALYTICS
- SMART & MICRO GRIDS FOR INTEGRATION OF RENEWABLE ENERGY SOURCES
- ELECTROMEDICAL & MOBILE COMPUTING TECHNOLOGIES
- PHOTONICS, RADAR & SATELLITE SYSTEMS
- ESCAPE ROOM DESIGN & IMPLEMENTATION
- SMART MOBILE APPS
- UAVIONICS

INTERNSHIP PROGRAMMES

A Broad Range of Inroads To Industry Experience
There is no better way to experience the working world than through internships. The School's impeccable reputation is often an inroad to the companies that our students want to intern with. With a wide array of industry networks, students have ample opportunities to secure their internships.

OUR INTERNSHIP PROGRAMMES INCLUDE:

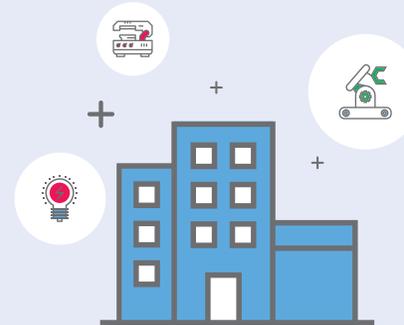| PROFESSIONAL INTERNSHIP (PI)	PROFESSIONAL ATTACHMENT (PA)
20 weeks	**10 weeks**
single, double-degree & second major programmes	second major and double-degree programmes

CORPORATE LABORATORIES

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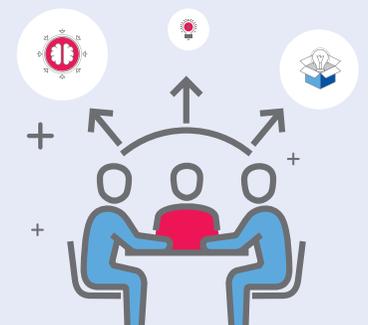Our programmes provide students confidence in industries and is instrumental in attracting some of the world's biggest multinationals to set up corporate laboratories at NTU EEE for joint research.

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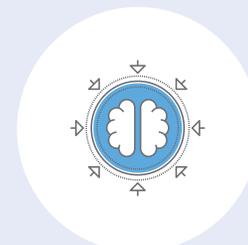
CUTTING-EDGE FACILITIES

MENTORING BY BOTH FACULTY AND CORPORATE LEADERS

Therefore students

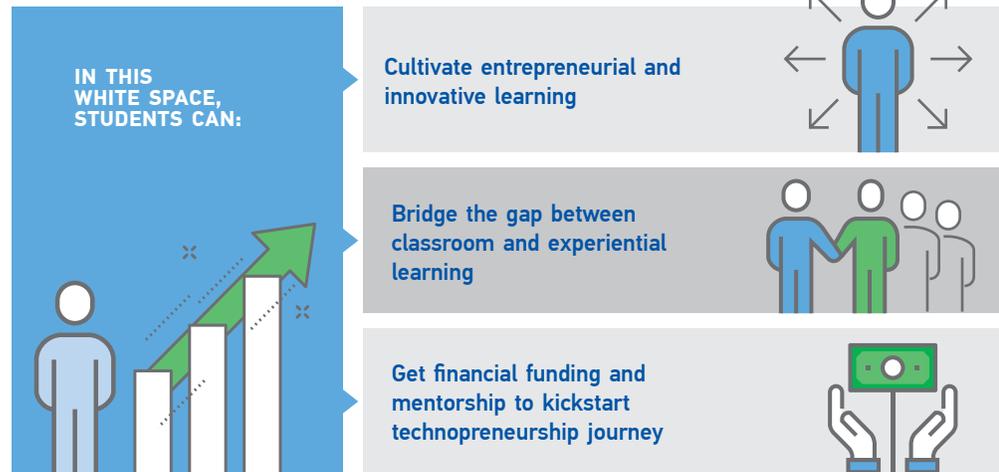GAIN HANDS-ON TECHNICAL SKILLS

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)
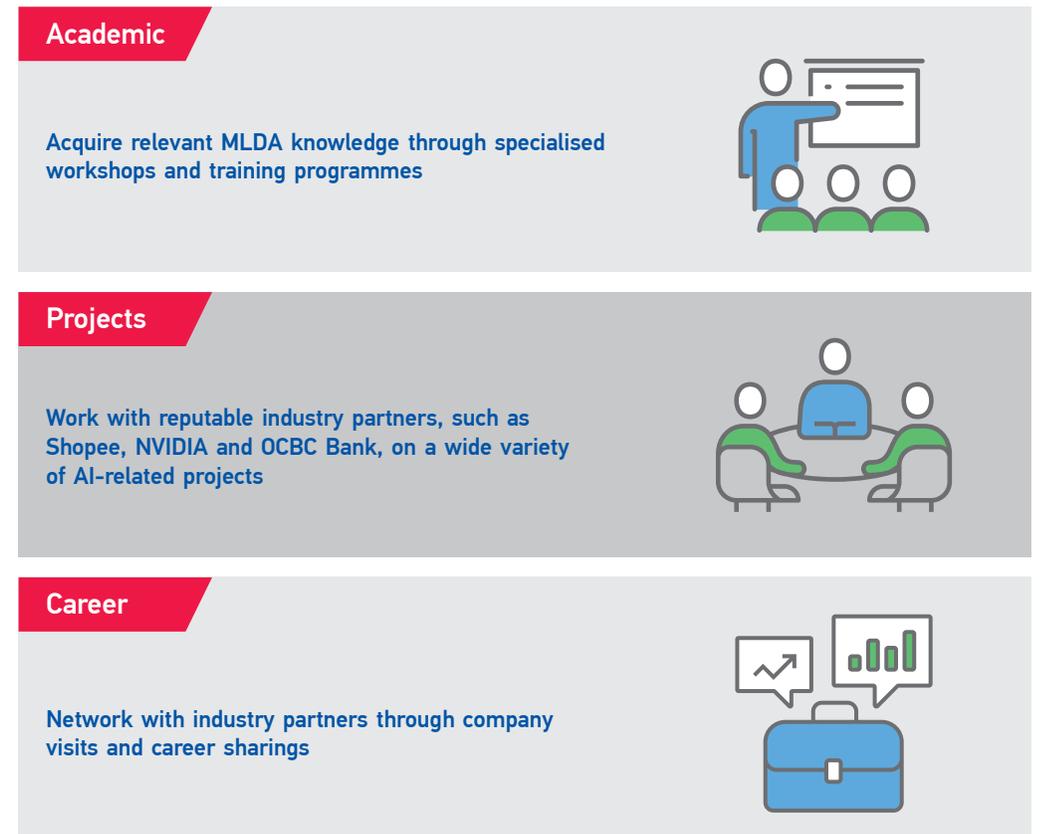- Singapore Power Group (SP Group)

GARAGE@EEE

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

IN THIS WHITE SPACE, STUDENTS CAN:

Cultivate entrepreneurial and innovative learning

Bridge the gap between classroom and experiential learning

Get financial funding and mentorship to kickstart technopreneurship journey

Garage@EEE Ambassador
Our student ambassadors are passionate about promoting the maker spirit to the EEE/IEM 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.

MLDA@EEE

The Machine Learning and Data Analytics lab (MLDA@EEE) empowers students to pursue the application of Artificial Intelligence (AI) to established EEE disciplines.

Academic

Acquire relevant MLDA knowledge through specialised workshops and training programmes

Projects

Work with reputable industry partners, such as Shopee, NVIDIA and OCBC Bank, on a wide variety of AI-related projects

Career

Network with industry partners through company visits and career sharings

EXCHANGE 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 with our renowned partner universities. Students go beyond the classroom, build up life skills and develop new networks.

Duan Jiafei
EEE Year 3
Currently in OGEM Explorer programme at Georgia Institute of Technology (USA)

Khor Kai Sherng
EEE Year 4
Research attachment at Massachusetts Institute of Technology (USA)

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

EEE CLUB

The Voice of the Students

As part of NTU Students' Union, the EEE Club strives to enhance the vibrancy of the school, empower voices and build bonds among EEE students. EEE Club serves as a bridge between the students and the school, taking up the responsibility of being the voice and speaking up for our students. Spicing up the campus life of students, the EEE Club organises both academic and non-academic events which includes workshops, welfare initiatives and EEE Week.

EEE OUTREACH

A Rewarding Role in Shaping The Future

The EEE Outreach Ambassadors serves as a bridge between the present and the future students. The EEE Ambassadors participate in events to share their EEE story to prospective students. Leadership skills are honed with various events organised by the committee such as Innovation Challenge, Induction Fiesta, and Open house. EEE Outreach Ambassadors plays a critical role in shaping the future of EEE.

EEE LEAD

A Generous Scope For Advancing Talent

LEAD (Leadership Enrichment And Development) develops leadership and managerial skills of EEE students. This programme exposes them to industry best practices and expand their professional networks through guidance from external advisors. Students experience personal growth and satisfaction through community service and humanitarian projects.

INFORMATION ENGINEERING & MEDIA

When you mix Art, Design and Media with classical Engineering studies, you get a whole new exciting programme called the Bachelor of Engineering in Information Engineering and Media.

By merging art and creativity with information, communications and digital media technology, new breakthroughs have been achieved. Remarkable progress in movies and games, for instance, are made possible with technology working hand in hand with art and creativity.

This new revolution has opened up new possibilities, experiences and business opportunities that will radically change the world. It has created the need for a new breed of infocommunication engineers equipped with sound understanding of the artistic and creative processes in media design and production. Information Engineering and Media (IEM) programme is the new age engineering.

PROGRAMMES WE OFFER:

- Bachelor of Engineering in Information Engineering & Media (IEM)
- Double Degree in Bachelor of Engineering (IEM) and Bachelor of Arts (Economics)
- Bachelor of Engineering (IEM) with a Second Major in Business

IEM CURRICULUM AT A GLANCE

1st YEAR

Mathematics I & II
Physics
Digital Electronics
From Computational Thinking to Programming
Thinking and Communicating Visually I
Object-Oriented Programming
Basic Media Writing
Eingineers & Society

2nd YEAR

Data Structure and Algorithm
Analog Electronics
Microprocessors
Engineering Mathematics I & II
Software Engineering
Computer Communications
Signals and Systems
Intro to Data Science & AI
Thinking and Communicating Visually II
Introduction to Design & Project
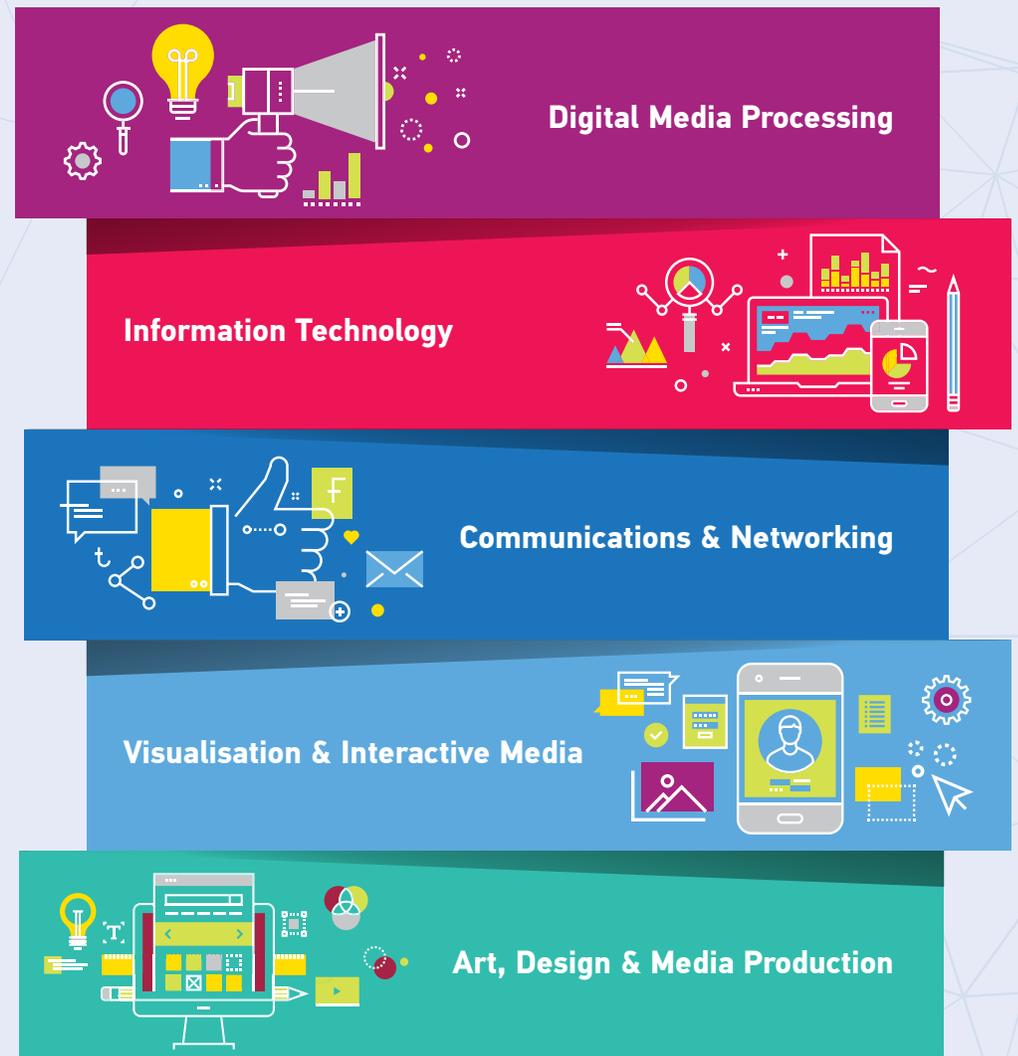
3rd YEAR

Design & Innovation Project
Engineering Communication II
Digital Signal Processing
Communication Principles
Information Security
Thinking & Communicating Visually III
Internship

4th YEAR

Final Year Project
1 Design Elective & 4 Technical Electives**; or
2 Design Electives and 3 Technical Electives**

** Students will choose courses depending on the area of interest.

CAREER PROSPECTS FOR IEM

GAMING, ANIMATION & INTERACTIVE ENTERTAINMENT

MEDIA

TELE-COMMUNICATIONS

RESEARCH & DEVELOPMENT

ELECTRONIC PRODUCTS

DEFENCE

BUSINESS & MANAGEMENT

IT & COMMUNICATIONS

EDUCATION

BANKING & FINANCE

SERVICE & OTHERS

TOP 5 INDUSTRIES WHERE OUR GRADUATES EXCEL

5%
5%
19%
60%
11%

- Information & Communication
- Finance & Business
- Public Administration & Defence
- Electrical Products
- Advertising & Market Research

AREA OF INTEREST:

Digital Media Processing

Information Technology

Communications & Networking

Visualisation & Interactive Media

Art, Design & Media Production

For more information

WHERE TECHNOLOGY MEETS ART

BACHELOR OF ENGINEERING
(Information Engineering & Media)

School of Electrical & Electronic Engineering

In collaboration with
School of Art, Design & Media
School of Computer Science and Engineering, and
Wee Kim Wee School of Communication & Information