VISION

A great global engineering college for education, research and innovation.

MISSION

To nurture creative and entrepreneurial leaders through broad-based, research-infused engineering education, advance knowledge and create innovative and sustainable solutions for the benefit of industry and society.

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What is Engineering?
Engineering is the application of mathematical, scientific, economic, social and practical knowledge to solve problems to improve the world around us.

Why Engineering?
Engineers make a DIFFERENCE to the world we live in, through new and enhanced solutions that improve lives and environment.

1. Engineering education equips you with knowledge and skills that are highly transferable across all sectors.

2. Engineers are in growing demand.
World Leader in Engineering Education and Research

- 2nd Globally*
- 1st in Asia*

6 internationally-renowned engineering schools ranked in the world’s TOP 20* by subject

Multidisciplinary and Well-rounded Curriculum

- Robust Professional Internship and Attachment Programmes

Gain real-world and professional experience at companies like Rolls-Royce and BMW

Vibrant Campus Life

- Residential living guaranteed for all freshmen
- Wide variety of F&B options and comprehensive retail and service stores

Exciting Student Life

- Over 100 student clubs to cater to diverse interests

Global Exposure

- 8 in 10 students undergo overseas immersion at least once during their studies

TOP Reasons to choose NTU College of Engineering

- Internationally-renowned Faculty and World-class Research and Learning Facilities

- Experiential Learning Opportunities

Numerous opportunities such as the Undergraduate Research Experience on Campus (URECA), Community Involvement Programme (CIP), and other international/national-level competitions to stretch the potential of students

*Academic Ranking of World Universities (ARWU) for the field of Engineering/Technology and Computer Sciences 2016, published by ShanghaiRanking Consultancy

*QS World University Rankings by Subject 2016
Programmes at a Glance

NTU College of Engineering offers a broad-based and multidisciplinary curriculum which integrates engineering with the arts, humanities, business and social sciences. We equip students with not only technical knowledge but also analytical, problem-solving, entrepreneurial and communication skills that are highly valued and sought after by employers.

Students can choose from 12 single degree programmes. In addition, students can also read a double degree, second major, or minor with choices from over 35 disciplines.

Single Degree Programmes (Direct Honours)

We offer 11 single degree Bachelor of Engineering programmes and a Bachelor of Science in Maritime Studies programme.

Our repertoire of single degree programmes offered:

- School of Chemical and Biomedical Engineering (SCBE)
  - Bioengineering
  - Chemical and Biomolecular Engineering

- School of Civil and Environmental Engineering (CEE)
  - Civil Engineering
  - Environmental Engineering
  - Maritime Studies

- School of Computer Science and Engineering (SCSE)
  - Computer Engineering
  - Computer Science

- School of Electrical and Electronic Engineering (EEE)
  - Electrical and Electronic Engineering
  - Information Engineering and Media

- School of Mechanical and Aerospace Engineering (MAE)
  - Aerospace Engineering
  - Mechanical Engineering

- School of Materials Science and Engineering (MSE)
  - Materials Engineering

Note: All Bachelor of Engineering programmes are accredited by the Institution of Engineers Singapore, the Singapore signatory of the Washington Accord, through its Engineering Accreditation Board. The Washington Accord is an international agreement for mutual recognition of the substantial equivalence of engineering academic programmes in satisfying the academic requirements for the practice of engineering at the professional level.

Second Majors

Students can choose to pursue a Second Major to broaden their exposure and knowledge within the typical candidature of 4 years. The Second Major is also designed to provide greater depth of study in an additional discipline. Students can choose from a variety of Second Majors that either complement their studies with qualifications in related areas or diversify their degrees with programmes in vastly different fields, which will give them a competitive edge, improving their job prospects.

The list of Second Majors available is as follows:

- Second Major in Business
  Students reading Engineering or Maritime Studies can pursue a Second Major in Business. Jointly offered by the College of Engineering and Nanyang Business School, this programme is designed to equip students with soft skills in management and leadership inherent to Business studies, in addition to the technical competencies of their Engineering major or Maritime Studies.

  Students can choose from any of the 6 Business Major tracks below, according to their interests and strengths.

  - Accounting
  - Banking and Finance
  - Business Analytics
  - International Trading
  - Marketing
  - Operations Management

  Graduates will acquire a distinct competitive advantage over their peers and enjoy better market value, career options, opportunities and mobility across the full breadth of the job market.

  Please refer to the following for more information.

  - Engineering in a chosen major with a Second Major in Business: www.coe.ntu.edu.sg/EngBizMajor

- Second Major in Food Science and Technology
  The Second Major in Food Science and Technology is a collaboration between NTU and the prestigious Wageningen University from the Netherlands, whose Food Technology programme is considered one of the best and most innovative in Europe. This Second Major is available for students reading Bioengineering and Chemical and Biomolecular Engineering. Five core courses will be taught by the faculties from Wageningen University with coordinators at NTU.

  Students will be at the forefront of resolving current and future challenges in food security for Singapore and beyond. These include system integration for enhanced food production, novel technologies for food waste reduction and conversion, food nutrition for an ageing population, as well as risk analysis and management in food safety.

  This Second Major in Food Science and Technology will open up myriad career opportunities in food industries including multinational corporations, government regulatory agencies, research institutions and local organisations.

  For more information on the programme, please refer to: www.ntu.edu.sg/fst
The list of double degree programmes available is as follows:

**Double Degree in Engineering and Economics**
This double degree programme, jointly offered by the College of Engineering and the College of Humanities, Arts and Social Sciences, aims to equip graduates with excellent knowledge and competency in engineering and economics over the programme duration of 5 years.

Armed with two honours degrees – Bachelor of Engineering (Honours) in a chosen major and Bachelor of Arts (Honours) in Economics, graduates can expect wider career options in engineering and economics-related industries and beyond. Engineers who have strong economic knowledge are also better equipped for management positions as they move up the corporate ladder. To the enterprising individuals, technical prowess and a good grasp of economic principles are essential for the sustenance of free enterprises and entrepreneurship.

For more information on the double degree programme in Engineering and Economics, please refer to: www.coe.ntu.edu.sg/DDEngEcon

**Double Degree in Computer Engineering/Computer Science and Business**
A collaboration with the Nanyang Business School, these double degree programmes allow students to hone their business management skills and excel at software application or computer engineering and development skills within the typical candidature period of 4 years. Students will develop strong foundations in business and computer engineering or computer science disciplines and acquire relevant skills that are much sought after in today’s job market.

At the end of 4 years, students will graduate with 2 honours degrees – Bachelor of Engineering (Honours) in Computer Engineering or Computer Science and Bachelor of Business (Honours) (specialising in Business Analytics). With the mix of business skills and technical knowledge, graduates can play dual roles and expect great career advancements by being IT-savvy and possessing strong business acumen.

For more information on the double degree programme in Computer Engineering/Computer Science and Business (with specialisation in Business Analytics), please refer to: www.scae.ntu.edu.sg/programmes/currentstudents/undergraduate/pages/hbsdd.aspx

**Minor Programmes**
In addition to their Engineering major, students are also able to pursue a minor to broaden their knowledge and skills, beyond what their major disciplines may provide. Students can choose from over 35 minor programmes such as Entrepreneurship, Finance, Life Sciences, Linguistics and Multilingual Studies, Public Policy and Global Affairs, Psychology, Sociology, etc.

For the full list of minor programmes available, please refer to: www.ntu.edu.sg/students/undergraduate/academicservices/academicprogrammes/pages/Minor_Programme.aspx
MINIMUM SUBJECT REQUIREMENTS FOR ADMISSION

Bachelor of Science (B.Sc) Programme
- Pass in a H1 Level/'O' Level Science subject
- Pass in H1 Level Mathematics/'O' Level Additional Mathematics or equivalent, and
- Pass in Senior High School Level Mathematics, and
- Pass in Junior High School Level Biology/Chemistry/Physics/Science

Bachelor of Engineering (B.Eng) Programmes

• Aerospace Engineering

- Pass in H1 Level/'O' Level Physics is only applicable to applicants who have not read H2 Level Physics
- Pass in H2 Level Mathematics, and
- Major CAP of 2.0 in Biology/Chemistry/Physics, and
- Overall CAP of 2.0 in Physics

• Materials Engineering

- Pass in H1 Level/'O' Level Physics, and
- Pass in H2 Level Mathematics, and
- Major CAP of 2.0 in Biology/Chemistry/Physics, and
- Overall CAP of 2.0 in Physics

• Chemical Biochemical Engineering

- Pass in H1 Level/'O' Level Physics, and
- Pass in H2 Level Mathematics, and
- Major CAP of 2.0 in Biology/Chemistry/Physics, and
- Overall CAP of 2.0 in Physics

• Engineering (with a minor in Bioengineering or Biomedical Engineering)

- Please refer to the minimum subject requirements for single degree Engineering programmes stated above.

• Maritime Studies

- Please refer to the minimum subject requirements for single degree Engineering programmes stated above.

Bachelor of Science in Maritime Studies
- Pass in Senior High School Level Mathematics, and
- Pass in Senior High School Level Biology/Chemistry/Physics, and
- Pass in Junior High School Level Physics

Second Majors
- Please refer to the minimum subject requirements for single degree Engineering programmes stated above.

Part-Time Bachelor of Engineering (B.Eng) Programmes

• Mechanical Engineering

- Please refer to the minimum subject requirements for single degree Engineering programmes stated above.

• Materials Science and Engineering

- Please refer to the minimum subject requirements for single degree Engineering programmes stated above.

Diploma Holders
Applicants should have a relevant diploma from one of the local polytechnics. Those with a Certificate of Merit, Diploma with Merit or Diploma with Distinction may apply for any programme in NTU regardless of the diploma.

International Students
Applicants with a GCE ‘O’ Level pass in Physics are only applicable to applicants who have not read H2 Level Physics

NOTES
1 Pass in H1 Level/'O' Level Physics is only applicable to applicants who have not read H2 Level Physics
2 Pass in Standard Level Physics is only applicable to applicants who have not read Higher Level Physics
3 Overall CAP of 2.0 in Physics is only applicable to applicants who have not passed in Physics
4 Pass in Junior High School Level Physics is only applicable to applicants who have not read Senior High School Level Physics
5 Please refer to the College’s and Schools’ websites for more information on the Second Majors and double degree programmes.

INTERNATIONAL STUDENTS
International students must have completed at least 12 years of general education, or be taking their 12 national examinations in the year of application and be considered for admission. In addition to fulfilling the minimum entry requirements, applicants must also satisfy the minimum English language requirements.

For further details, please refer to:
http://admissions.ntu.edu.sg/undergraduate-international/applicants.html

Please refer to the College’s and Schools’ websites for more information on the Second Majors and double degree programmes.
With a robust grounding in chemical and biomedical engineering, you could be among those discovering principles of chemical engineering and life sciences (biology, biochemistry and genetics) to facilitate the development of safe, profitable and environment-friendly process for the synthesis and manufacture of products from chemical/biological raw materials. If this prospect excites you and you have what it takes to realise this vision, step on the path now. The starting point is NTU’s School of Chemical and Biomedical Engineering.

Through a curriculum melding engineering principles with those of life and chemical sciences, we groom dedicated and aspiring chemical and biomedical engineers to attain their goals and tap on their full potential.

SCBE offers two direct honours degree programmes in Bioengineering (BIE) and Chemical and Biomolecular Engineering (CBE).

### Areas of Specialisation
- Biopharmaceuticals
- Food/Flavours/Fragrances
- Nanotechnology
- Petrochemicals

### Industries and Careers
- Specialty Chemicals
- Trading and Finance related jobs in relevant industries

### DEGREE PROGRAMME IN CHEMICAL AND BIOMOLECULAR ENGINEERING

Chemical and Biomolecular Engineering is the branch of engineering that deals with the application of physical sciences (e.g. chemistry and physics), and life sciences (e.g. biology, microbiology and biochemistry) with mathematics and economics to the process of converting raw materials or chemicals into more useful or valuable forms. In addition to producing useful materials, modern Chemical and Biomolecular Engineering is also concerned with pioneering valuable new materials and techniques such as nanotechnology, fuel cells and biomedical engineering.

The CBE programme aims to produce a new generation of graduates with strong quantitative and analytical skills, as well as engineering know-how to excel in traditional chemical/petrochemical/pharmaceutical industries, as well as other emerging fields upon graduation.
STUDENT EXPERIENCE

Pursuing an engineering education at NTU SCBE provides vast opportunities for me to develop creativity, analytical and problem-solving skills, which are essential for an engineer and also for my personal development.

Life in SCBE has been a challenging yet enjoyable one. The rigorous academic curriculum not only equips me with knowledge and practical skills, but also provides an environment that stimulates my creativity and develops my critical thinking, preparing me for my future career.

I am privileged to be taught by professors who are well-versed in their field of studies. They are friendly, approachable and willing to share with us their industrial experiences, which gives us some insights about potential careers we can pursue in the future.

There are also many opportunities for personal growth and development. I was given the chance to take on a leadership role in Overseas Community Involvement Project (OCIP) under SCBE Club. Besides making new friends, I was also able to develop my interpersonal and management skills as a leader. It has also broadened my global perspective and made me appreciative of little things in life. I am really grateful to be in OCIP as it provides a platform for me to learn and at the same time, grow as a person.

Kong Wen Chuan
Undergraduate, Year 3
Bachelor of Engineering in Chemical and Biomolecular Engineering

Achievements
• Dean’s List, AY2015-2016
• Recipient of Temasek Foundation Leadership Enrichment and Regional Networking (TF-LEaRN) Outbound Scholarship, 2016
• Co-chairperson, SCBE Overseas Community Involvement Project (OCIP), 2015-2016

SCBE’s research team has found a new way to treat tumours by using bubbles to deliver drugs deep into cells. This targeted treatment prevents the drug from damaging healthy cells and thus increasing the effectiveness of the treatment.
Clean water to homes in remote corners of the earth, renewable sources of energy and water reclamation – your field covers all these areas and much more, in addition to building bridges and other infrastructure which are key to any progressive economy. Imagine the world as you would like it to be and then take the step to make it happen.

The School of CEE’s direct honours degree programmes in Civil Engineering and Environmental Engineering are built on broad-based and comprehensive curricula. These programmes will sharpen your critical thinking and communication skills, grooming you to take up an engineering career shouldering vital responsibilities, or pursue more specialised studies and engage in continuous learning. The School of CEE also offers a direct honours degree programme in Maritime Studies, where you will learn to rise to challenges faced by the maritime industry and be groomed in shipping, business and management to helm your chosen field.

At the School of CEE, you will also find a technologically stimulating environment conducive to research and development. Through collaborations with industry partners and overseas institutions, our programmes are professionally oriented and provide opportunities to contribute to industry and society.
STUDENT EXPERIENCE

Oh En Yao, Joshua
Undergraduate, Year 4
Bachelor of Engineering in Environmental Engineering

My experience at NTU CEE has been phenomenal. University life here is exciting, fulfilling and learning does not limit itself within the classroom.

My professors genuinely care for students; they always reply to queries via email or face-to-face consultations timely. With professors possessing such strong sense of responsibility and duty towards students, I find myself constantly motivated to excel.

CEE has given me an edge in terms of breadth and depth of knowledge and experience in water supply and wastewater engineering. I have also been fortunate to join the Maritime Studies degree programme with a Second Major in Business, your comprehensive learning journey will include core business courses such as accounting, business environment and marketing.

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DID YOU KNOW?

DEGREE PROGRAMME IN ENVIRONMENTAL ENGINEERING

This programme imparts knowledge, skills and capabilities across a wide spectrum of environmental engineering domains. You will gain an in-depth perspective into the role you can play in building and maintaining sustainable living environments. Under this programme, you will acquire knowledge in areas such as sustainable resources management, environmental monitoring and data management, as well as aquatic ecosystems and marine environment.

Areas of Specialisation

- Air Pollution Control Engineering
- Aquatic Ecosystems and Marine Environment
- Environmental Biochemical Engineering
- Environmental Monitoring and Data Management
- Industrial Wastewater Management
- Integrated Industrial Management
- Membrane Technology
- Surface Water Quality
- Sustainable Resources Management

Courses for Civil Infrastructure Specialisation

- Construction Technology and Processes
- Geotechnical Engineering
- Reinforced Concrete Design
- Steel Design
- Structural Analysis I

Environmental Engineering students will receive a separate certificate upon completion of these 5 courses, and can register as Professional Engineers with the Professional Engineering Board, Singapore.

Areas of Specialisation

- Marine Science and Technology
- Ship Chartering/Accounting
- Marine Insurance
- Maritime/Business Law
- Maritime Science and Technology
- Ship Chartering/Accounting
- Shipping Logistics/Strategy
- Shipping Management
- Shipping/Port Economics
- Shipping/Port Economics
- Supply Chain/Export/Import
- Trade/Pricing/Brokerage
- Transportation Sales
- Voyage Planning

Industries and Careers

Shore-based jobs which include:

- Chartering/Logistics
- Freight Forwarding
- Marine Operations
- Market Intelligence
- Post-Fixture
- Supply Chain/Export/Import
- Trade/Pricing/Brokerage
- Transportation Sales
- Voyage Planning

DOUBLE DEGREE PROGRAMMES

- Civil Engineering and Economics*
- Environmental Engineering and Economics*

SECOND MAJORS

- Civil Engineering with a Second Major in Business*
- Civil Engineering with a Second Major in Society and Urban Systems*
- Environmental Engineering with a Second Major in Business*
- Environmental Engineering with a Second Major in Society and Urban Systems*
- Maritime Studies with a Second Major in Business*

*Jointly offered with the College of Humanities, Arts and Social Sciences
*In collaboration with the Nanyang Business School

DEGREE PROGRAMME IN MARITIME STUDIES

The Maritime Studies degree programme will equip you with the necessary expertise in shipping, business and management, as well as maritime science and technology to meet the rising challenges in the maritime industry.

Through the curriculum, you will acquire knowledge in areas such as ship chartering/accounting, shipping management, as well as maritime science and technology. If you are pursuing the Maritime Studies degree programme with a Second Major in Business, your comprehensive learning journey will include core business courses such as accounting, business environment and marketing.

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Achievements

- Singapore Armed Forces (SAF) Scholarship Holder, AY2013-2017
- Winner of SembCorp Water Technology Prize 2016
- CEE Admission Silver Award for Top Students, AY2013-2014
- Top 10 Projects for HDB: Cool Ideas for Better HDB Living, AY2013

Maritime Studies students get to travel to Norway to study at the BI Norwegian Business School for one semester during their 3rd year. With specialised training and overseas exposure, students will gain a stronger edge in maritime industries, complementing Singapore’s drive to become an international maritime centre.

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Undergraduate, Year 4
Bachelor of Engineering in Environmental Engineering

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From our transportation links to our communal spaces and the way we manage our environmental resources, technologies converge to make a positive difference. They give rise to the concept of smart cities which implements digital, information and communication technologies to transform urban areas into greener, more cost-efficient and generally more pleasant spaces to be in. At the same time, the evolution of connected devices — such as wearables and smartphones — means that more of us can interact within the digital architecture of where we live, work and play. It is a wave of technological advancement that is unstoppable.

By coming on board at SCSE, you can ride this wave as a computer engineer or scientist to leave a positive mark on your economy and society. You will be expanding your computer technology capacities exponentially at the same time.

An acknowledged pathfinder in the field of computer engineering and computer science, SCSE has the state-of-the-art equipment to support and complement our broad-based and comprehensive degree programmes. Our stimulating environment along with our reputable faculty, will inspire you to be among an elite group of computer science engineers pioneering and designing solutions to challenges ahead.

Committed to letting you tap all your capabilities and talents, we offer you a wide range of direct honours degree programmes, second majors and double degree programmes that consist of both regular projects and group work. With solid foundation, hands-on experience and topped with in-depth theoretical knowledge as well as strong analytical skills, the graduates of SCSE are assured of their marketability in any industry as the demand for quality Information Technology graduates is set to rise. Aimed at harnessing Information and Communications Technology, networks and data for a better quality of life, this programme is a huge employment conduit for our graduates.

As the world becomes increasingly urban, computer engineering technologies play a leading role in shaping our cities into pleasant, progressive and planet-friendly environments for work and daily life.
DEGREE PROGRAMME IN COMPUTER ENGINEERING

This programme is a distinctive fusion of computer hardware technologies and software engineering. Under this programme, you will be trained in both hardware and software development, with the unique opportunity to gain knowledge in programming and digital systems, coupled with the specialised skills in software and hardware interfacing.

Areas of Specialisation

- Data Science
- Digital Media
- High Performance Computing
- Information and Cyber Security
- Information Systems
- Intelligent Systems
- Networking and Mobility

Industries and Careers

- Animation and Gaming Development Industries
- Computer and Information Systems Functions
- Cyber Security Industries
- Data Science
- Financial Analytics
- Interactive Entertainment Industries
- Research and Development
- Software Architecture and Development
- Software Consultancy and Analytics
- and many more

DOUBLE DEGREE PROGRAMMES

- Computer Engineering and Business
- Computer Science and Business
- Computer Engineering and Economics
- Computer Science and Economics

SECOND MAJORS

- Computer Engineering with a Second Major in Business
- Computer Science with a Second Major in Business

ALUMNA EXPERIENCE

“I like that the courses at SCSE are industry-relevant. Students are also able to pursue and focus on other areas of interest. I had the full autonomy on my own growth.

With careful planning and SCSE’s flexible environment, I was able to do 5 internships – spanning across development, consulting and investment banks while going on global exchange programmes and taking leadership positions in extra curricular activities at the same time. These internships were invaluable opportunities for me to acquire and develop my soft skills and technical competencies.

I also went to Germany for a semester under the Global Education and Mobility (GEM) Explorer programme. This experience has not only influenced my thinking and values but also greatly improved my cultural intelligence and social skills.”

Gao He
Class of 2016
Bachelor of Engineering in Computer Engineering with a minor in Business (First Class Honours)
Currently pursuing a Master’s Degree in Computer Science at Yale University

Achievements

- Dean’s List, AY2012-2015
- Information Technology Management Association Gold Medal cum Book Prize 2016
- President of NTU French Society, 2014-2015

DEGREE PROGRAMME IN COMPUTER SCIENCE

This programme offers a more focused study in the theoretical foundations of information and computation, as well as practical techniques for their implementation and application in large-scale software systems. While Computer Science may share some common topics with Computer Engineering, such as computer networks, coding, computer architecture, logic and software engineering fundamentals, they differ at the algorithmic and conceptual levels. Computer Science focuses more on software design and implementation, but less emphasis on topics such as circuit theories, electronics principles and digital communications.

Areas of Specialisation

- Data Science
- Digital Media
- High Performance Computing
- Information and Cyber Security
- Information Systems
- Intelligent Systems
- Networking and Mobility

Industries and Careers

- Cyber Security Industries
- Defence and Research Industries
- Enterprise Network Management
- Game Development Industries
- Hardware Development Industries
- Interactive Entertainment Industries
- Research and Development
- and many more

Mr Leo Chen, Class of 2005
Mr Leo Chen is the co-founder and Chief Executive Officer of Jumei.com, the first China-based cosmetics group-buying site. He joined the ranks of the world’s billionaires after Jumei’s listing at the New York Stock Exchange in May 2014. Mr Chen’s remarkable success in co-founding a billion dollar business empire also made him into Forbes China’s “30 Under 30” – a list of notable entrepreneurs under the age of 30 – in both 2012 and 2013.

Mr Chinmay Malaviya, Class of 2012
Mr Malaviya is the co-founder and advisor of foodpanda, a global mobile and online food delivery portal.

Mr Tan Chade Meng, Class of 1994
Mr Tan was the 1st Singaporean to be employed by Google Headquarters, Silicon Valley, USA. He is a Google pioneer, an award-winning engineer, a New York Times bestselling author, a thought leader and philanthropist.

DID YOU KNOW?

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Mr Tan Chade Meng, Class of 1994
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Be it revolutionising the way people connect through the next generation super smartphones, or creating intelligent nano-gadgets to empower industry, you will be equipped with the most relevant technological knowledge and hands-on experience.

By building on your forte in Electrical and Electronic Engineering, you empower yourself to take part in sculpting the latest innovation and shaping people’s lives in the modern world. Your knowledge and design could very well push the frontiers of other sectors such as media communications and satellites.

Besides offering well-rounded, multifaceted programmes in Electrical and Electronic Engineering, the School of EEE broadens your perspective with cross-disciplinary courses in the arts, business and humanities. With the mentorship from our brilliant faculty and access to our world-class equipment and modern research laboratories, you will realise your full potential as a top notch electrical and electronic engineer.

The School of EEE offers two direct honours degree programmes – Electrical and Electronic Engineering, and Information Engineering and Media.

Position yourself in one of the top 8 Electrical and Electronic Engineering Schools in the world today and learn from the brightest faculty members. You will see how you can electrify the world through innovation wonders.

ELECTRIFYING YOUR WORLD THROUGH INNOVATION WONDERS
School of Electrical and Electronic Engineering (EEE)
STUDENT EXPERIENCE

EEE’s broad-based and flexible curriculum allows me to not only gain theoretical knowledge, but also apply what I have learnt during lab sessions and in design projects.

Being in EEE’s Leadership, Enrichment and Development (LEAD) Programme has given me the opportunity to hone my soft skills in leading and organising events and giving back to the society in the form of volunteering for both overseas and local community involvement programmes. I was also privileged to participate in the overseas cultural programme which has allowed me to learn and interact with people from overseas and industries.

The opportunity to go on exchange programme exposed me to a different living and learning environment. I made new friends of different nationalities, learnt to be more independent and grew as a person.

My undergraduate experience has been enriching and fulfilling in both academic and non-academic aspects. It has shaped me into a better-rounded individual.

Garage@EEE is a student-dedicated space at the School of EEE, taking on a different approach to conventional learning. This white space where students initiate not just projects but also workshops, allows EEE students to engage in interdisciplinary projects.

Researchers from the School of EEE have developed a processing chip that uses less power to better detect brain signals and identify their neuron sources, a process called spike sorting. Their real-time processing, multi-channel chip is believed to be the first of its kind, and could lead to more compact neural implants.
If you are excited about materialising life-changing solutions, we challenge you to dedicate yourself to this search. Start by enrolling at the School of Materials Science and Engineering (MSE) and enter the fascinating world of materials.

Currently nurturing about 1,000 undergraduate and 300 postgraduate students, MSE is one of the world’s largest and most comprehensive materials engineering institutions. By offering an application-oriented engineering education in advanced materials, intertwined with a global perspective, we consistently produce graduates who are widely sought after by numerous industries. You will feel impassioned to pioneer, innovate, and design avant-garde materials to improve the quality of life for ourselves and the next generation. Our comprehensive, all-rounded degree programmes will also equip you with the specialised knowledge and soft skills you will require to pursue your choice career.

At MSE, we believe that students should aim for achievements beyond academic excellence. We have in place student-centric initiatives, such as the Leadership Excellence Programme (LEP), to hone your leadership and communication skills. Students also have many opportunities to interact with our industrial partners and alumni. In addition, with the aim of instilling an entrepreneurial and innovative spirit in MSE, we organise the annual Ian Ferguson Innovation Challenge (IFIC) to encourage innovation among students. Through this seed funding, the IFIC allows novel ideas from students to be translated into a technological product.

At the core of all facets of life, materials stand firm as the pillar for all engineering fields. Whether it is to make the humble glass ‘smarter’, or to produce a biocompatible glue to replace sutures in surgery, the search for materials that break new technological frontiers is never ending.
MSE enriches student life through overseas attachment and exchange programmes. With international exposure, students will glean invaluable perspectives while enhancing their employability. With the MSE Students’ Global Experience (SGE) Award, we envision a high participation rate in overseas attachments that would eventually benefit up to 80% of our student population.

Tan Siew Ting, Melissa
Undergraduate, Year 3
Bachelor of Engineering in Materials Engineering

Achievements
• Dean’s List, AY2015-2016
• CN Yang Scholars Programme
• Agency for Science, Technology and Research, A*STAR Undergraduate Scholarship Holder, 2014
• A*STAR Chairman’s Honours List, AY2014-2015
• Academic Services Director of the 1st Crescent Hall Council, AY2014-2015
• Holistic Development Director of the 8th CN Yang Scholars’ Club Executive Committee, AY2015-2016
• Singapore representative at the 1st World Science Conference Israel, 2015

I was drawn to NTU CoE’s innovative and vibrant research culture. NTU also provides the platform for me to work with and learn from world-renowned professors and high-achieving peers.

The MSE family is a close-knit and supportive community and MSE truly cares about both the professional and personal development of its students. The MSE Leadership Excellence Programme has given me opportunities to hone my leadership and communication skills through workshops and outreach events.

I had the invaluable opportunity to represent Singapore along with four other NTU students at the 1st World Science Conference Israel in 2015. This was an inspirational and eye-opening experience.

Another highlight was my summer research internship with the Institute for Materials Research and Engineering, A*STAR after my second year. The interdisciplinary training I acquired in MSE prepared me well for the steep learning curve during the project. I picked up a wide range of new technical skills beyond the school curriculum and honed my research skills further during the stint.

In a world that is becoming increasingly complex, the holistic training that MSE provides prepare students well for the future.
As a mechanical engineer, you could be part of the force revving up new equipment ranging from machineries to vehicles to robots. Or, if the idea of an Aerospace Engineer excites you more, join those helping to power the aircraft and flight systems of the future.

At the School of MAE, our comprehensive and broad-based curricula will help you tap the forces that are fast transforming the world’s technological landscape: developments in robotics, nanotechnology, aerospace, and the life sciences, among others. With the guidance of the talents among our faculty and access to our state-of-the-art facilities for teaching and research, you will gain in-depth knowledge for your chosen field, as well as enjoy opportunities to accentuate your learning experiences while contributing to the development of future technologies.

Some of the projects you might be working on at the School of MAE include solar powered vehicles and unmanned aerial vehicles; robots and intelligent systems for new-generation manufacturing; biomedical sensors, actuators and other life-saving systems; micro-electromechanical systems; information storage systems; microprocessor-driven consumer products and energy systems. You will also participate in a 20-week professional internship programme with companies as prestigious as Rolls-Royce International, and therefore relish the experience of a professional working environment and gain valuable practical experience.

The School of MAE offers two direct honours degree programmes: Mechanical Engineering and Aerospace Engineering.

DEGREE PROGRAMME IN AEROSPACE ENGINEERING

This programme equips students with specialty training and tools, allowing them a seamless entry into the challenging aerospace industry. Under the Aerospace Engineering degree programme, students will acquire knowledge in areas such as Aerodynamics, Aircraft Design and Aircraft Propulsion.

Areas of Specialisation

A specialised degree that covers exciting topics such as the design and optimisation of flight vehicles and their propulsion systems.

Industries and Careers

- Aerospace Consulting
- Aircraft Design and Manufacturing
- Aircraft Operations and Maintenance
- Aviation Regulatory Bodies
- Finance and Banking
- Project Planning and Management
- Research and Development
- Teaching
- And many other engineering and non-engineering related jobs
ALUMNA EXPERIENCE

One of the first things that caught my attention was how warm and welcoming the professors at MAE were. They were genuinely interested in developing my potential and as a freshman, I felt reassured that I had professors who were eager to guide me in university. Throughout my academic journey at MAE, my professors have always been supportive and encouraging.

MAE's curriculum is very well-rounded. We were able to broaden our perspectives beyond the engineering spectrum and develop soft skills with interdisciplinary electives such as sports and arts modules or minors in business or entrepreneurship.

One of the greatest takeaways from my university education is the confidence boost I have in public speaking and presentation skills. I started out as a shy individual but with the numerous presentations at MAE, I definitely became more self-assured and confident.

My overseas exchange was definitely one of the highlights of my university education. I went for exchange at Rensselaer Polytechnic Institute in the USA and it was the most eye-opening experience of my life. I met many different people from around the world and also immersed in a whole new culture. It made me truly appreciate the vastness of the opportunities out there.

I was never one to dream big but now I’m inspired to push all boundaries and aim for bigger things.

R. Sangeetha
Class of 2016
Bachelor of Engineering in Mechanical Engineering (First Class Honours)
Inspection Engineer at Shell Chemicals Seraya Pte. Ltd. (Shell Graduate Programme)

Achievements:
• Nanyang Scholarship Holder
• University Scholars Programme (USP) Scholar
• Recipient of Dr Leung Shiu Kee Gold Medal, AY2015-2016

Our two-storey-high and 13-metre wide control tower simulator at Air Traffic Management Research Institute (ATMRI), School of MAE, which provides a 360-degree-view, is one of the largest air traffic control towers for research purposes in the world.