NTU’s Renaissance Engineering Programme (REP) is committed to nurture engineering leaders with an entrepreneurial spirit to serve society with integrity and dedication. Our unique broad-based, inter-disciplinary engineering education, which integrates engineering, science, business, technology management and humanities, prepares students to be future-ready whereby students can learn and unlearn while taking on top positions as Chief Executive Officers and Chief Technology Officers. During the programme, students can look forward to a one-year overseas study stint at a renowned partner university, including working with an organisation as part of Professional Attachment requirements. These lay the foundation for global perspectives and cross-cultural capabilities which are inherently critical qualities for future leaders. Leadership is a special feature in REP, as we provide a structured leadership development programme for students to discover their potential. At the REP, we adopt new pedagogies of learning and teaching, which train students to take on a more dynamic and participative role in their own learning.

The student life in REP is marked by its vibrancy and close-knit community. Students can enjoy guaranteed hall stay in North Hill, an integrated teaching and residential facility for REP. Outside the classroom, there are plenty of fun-filled events and activities spearheaded by the student body of REP, called the REClub.

We strive to ensure that REP students have an enriching and holistic experience in NTU as well as the partner university in Year 3. We warmly welcome you to the REP community, and wish you a fantastic journey ahead.

Professor Lalit Goel
Director
Renaissance Engineering Programme
REP - The Future of Engineering Education

Premier Scholars Programme and Scholarship

Broad-based Interdisciplinary Curriculum

Leadership Development

Overseas one-year study

Team-based Learning Pedagogy

Overseas Professional Attachment

Taught by Top Faculty (REP Fellows)

Residential Experience and Student Life
REP is a flagship engineering programme that aims to nurture students as future leaders of industry. It is a dual-degree programme offering Bachelor of Engineering Science (with a Specialisation in a specific engineering discipline) and Master of Science (Technology Management) degrees in 4.5 years. The curriculum is broad-based interdisciplinary in nature and integrates engineering, science, business, technology management and humanities.

Year 1 & 2
Common core courses in mathematics, sciences and engineering disciplines and functional areas of business and entrepreneurship

Year 2 & 4
Core and elective courses in any of the 10 engineering specialisations

Aerospace Engineering
Bioengineering
Chemical and Biomolecular Engineering
Civil Engineering
Computer Engineering
Computer Science
Electrical and Electronic Engineering
Environmental Engineering
Materials Engineering
Mechanical Engineering

Year 3
Overseas one-year study in a chosen engineering specialisation at any of the renowned partner universities, with overseas Professional Attachment

University of California, Berkeley
Imperial College London
Northwestern University
University of British Columbia

Year 4 & 5
Core courses in the management of technology, along with Renaissance Capstone Project (RCP) or Final Year Project (FYP)

Throughout the programme, students will also take common and elective courses in ethics and humanities and embark on a leadership programme.
Admission Information

Admission Qualifications
Applicants should possess the requisite pre-university qualifications in order to be admitted to the Programme.

Admission Requirements*

| Singapore - Cambridge GCE A-level Certificate | • At least two passes in subjects at H2 level, and attempted General Paper (GP) or Knowledge & Inquiry (KI) in the same sitting
| | • H2 level pass in Mathematics
| | • H2 level pass in either Physics or Chemistry or Biology or Computing
| | • ‘O’ Level or equivalent pass in Physics for applicants who have not read H2 level Physics
| International Baccalaureate Diploma | • Mathematics at Higher Level
| | • Physics or Chemistry or Biology or Computer Science at Higher Level
| | • Physics at Standard Level or equivalent pass for applicants who have not read Physics at Higher Level
| NUS High School Diploma | • Major CAP of 2.0 in Mathematics, and Physics or Chemistry or Biology
| | • An overall CAP of 2.0 in Physics is applicable to applicants who have not majored in Physics
| Polytechnic Diploma | • ‘O’ Level pass in Physics
| | • A good GPA in an Engineering-related diploma
| International Qualifications | • Mathematics at Senior High School Level
| | • Physics or Chemistry or Biology at Senior High School Level
| | • Physics at Junior High School Level for those without Physics at Senior High School Level
| | • A good grade in General Paper or English at Senior High School Level

*Applicants may refer to the NTU and REP website for full details of the admission requirements.

Application
All applicants seeking admission to the Renaissance Engineering Programme are required to submit their application via the NTU Admissions website. As admission to the REP is in conjunction with admission to a NTU Premier Scholars Programme, applicants are required to submit a personal essay and provide at least one referee’s appraisal with their applications. Shortlisted candidates are required to go through a Multiple Mini Interview format and produce relevant supporting documents for verification.
Renaissance Engineering Programme Scholarship

The REP Scholarship* is awarded to outstanding freshmen pursuing a full-time Renaissance Engineering Programme in NTU. It recognises students who excel academically, demonstrate strong leadership potential, and possess outstanding co-curricular records.

The Scholarship covers up to the normal programme duration on condition that the scholarship holder maintains a minimum cGPA of 3.75 (from Academic Year 2017 onwards) and conduct satisfactory to the University.

Benefits for overseas study in Year 3 will include enrolment and tuition fees at the partner university, return airfare, overseas accommodation and meals/meal allowance at the partner university and official duration of professional attachment.

All successful applicants will be offered the REP scholarship. No bond is attached to the REP Scholarship apart from the three-year bond applicable to all Singapore PRs and international students under the MOE Tuition Grant Scheme.

*Applicants are to refer to REP website for full details of the scholarship terms and conditions.

Overseas Professional Attachment

All REP students have the opportunity to do their professional attachment in US, UK or Europe. The attachment can be self-sourced or placed by the NTU Career and Attachment Office. The attachment can be in private organisations or start-ups. Examples of organisations where students have interned include Bayer, Pfizer, 3M, Merck & Co and McLaren Applied Technologies.
Students’ Experience

REP Residential Experience

REP Students are housed at the North Hill facilities, which is an integrated teaching and residential facility in NTU.

The residential facilities include:

- The largest fully-equipped gym (about 580 sqm).
- Multi-purpose hall that can be used for activities like badminton, basketball, etc.
- Eateries, shops and common spaces such as lounges and study rooms.
- Additional recreational areas like sky lounges and rooftop gardens with BBQ pits.

The teaching facilities include:

- There are 2 Seminar rooms over two floors.
- 7 Discussion rooms including 2 rooms with self-recording video capabilities.
- 2 interactive lounge rooms equipped with LED screens.
Students’ Testimonials

The REP Experience

“REP is a unique programme which offers students the opportunities and resources to explore a diverse range of interests including coding, designing, tinkering and business and finance. In REP, we are a vibrant community of passionate and talented individuals who continually inspire each other to excel and grow in our skills and character.”

Ernest Tan Yong En
Year 3
Computer Science

“There are two aspects of REP that resonate with me: broad exposure and a strong sense of community. We are exposed to a wide variety of opportunities and engineering fields, which allows us to learn and develop our interests. As a tightly knit community of motivated individuals, different batches work closely together on many student-initiated projects. With Team-Based Learning, we are able to accelerate and consolidate our learning through pre-uploaded lectures and cooperative application exercises.”

Jaclyn Lee
Year 4
Bioengineering

Overseas Experience

“This one-year exchange has been nothing short of amazing. It greatly expands my world view as I am exposed to the diversity of people and liberal culture. Studying in a new environment exposes me to different teaching methods and an invigorating energy in the classroom setting. Discovery takes place across countries, within the city, around the campus - it is everywhere, and I feel deeply inspired when I least expect it. Being on exchange feels as if I am given a new, blank canvas on which I could paint my own interpreted watercolour, and I feel deeply grateful for this refreshing experience. I have a renewed appreciation for Singapore and a stronger drive to make a difference.”

Lim Shi Ying Serene
Year 4
University of British Columbia
Mechanical Engineering
SAP SE is a German MNC that manages large scale enterprise software for businesses. I spent three months at the headquarters in Germany where I was given the opportunity to intern at the Innovation Center Network together with another intern, Crystal. We were tasked to develop a new solution with a supportive team spearheaded by my supervisor. To cultivate our solution, we collaborated with various external corporations in Europe to identify existing processes in their businesses which our solution could potentially improve. Using a design thinking methodology, we developed multiple prototypes with the help of our friendly colleagues and supervisor. This internship was a great avenue to perfect our business and technical skills. Also, being immersed in a different culture was amazing. We explored many places in Germany (even France) and took part in many festivals and events such as the Oktoberfest in Munich.

Chen Wei Jian
Year 4
Computer Science
Interned at SAP SE, Germany

We are really very fortunate to be able to have an overseas experience as part of our REP education. It distinguishes us from other students and widens our perspective of the world. My internship with Dyson UK has taught me many practical skills and lessons that a sheltered school environment cannot teach. Joining Imperial College has so far been an exciting adventure that gives me plenty of opportunities to learn and explore my interests. London is such a wonderful city to live in if you like the hustle and bustle, and Woodward Building (our hall) is a nice respite from the city life. Impromptu travelling to Europe and even Africa makes the stay even more fun and thrilling. I truly appreciate my journey in REP.

Lim Shu Fang
Year 4
Mechanical Engineering
Interned at Dyson Ltd, UK
REP is not just an engineering course, nor is it a management course. It does not fit nicely into any of the traditional fields of studies and I did not have an easy time explaining to my friends and family on what exactly it was. However, this is precisely the strength of the REP curriculum. It mirrors itself after the fact that no real world problem is purely a one-dimensional problem, but rather a blend of different fields of knowledge coming together and interacting in intricate ways. REP prepares us to handle such problems with its meticulously planned broad-based curriculum, which exposes us to all engineering fields while deep-diving into one field of our choice.

My 3rd Year in UC Berkeley is definitely the highlight of my university experience, and one that is very unique to REP. The year abroad was truly eye-opening and many of us were able to gain new perspectives about ourselves as well as the greater world around us. It is also the first time many of us have a taste of the entrepreneurial culture, which is a distinct identity in the Bay Area. It encouraged us to become more adventurous, with many of us attempting start-ups or joining competitions to pitch our skills and knowledge against the best. Building on top of this entrepreneurial experience from Berkeley, we were placed with actual start-ups to help them develop their businesses as part of our MSc in Technology Management curriculum. This placement gave us an insight on how our classroom knowledge is applied to real-life scenarios.

I took a leap of faith in joining REP in its earlier years, I am thankful that REP has met all my expectations and more. It is also very heartening to see how REP has grown from strength to strength and has established itself firmly as the premier engineering programme in Singapore.

Danny Soo Hong Kit
Electrical & Electronic Engineering Graduate Programme, Vodafone
(Class of 2017)

REP has given me an education that goes beyond the classroom, and has served me well in the corporate world. The multidisciplinary approach it took to combine engineering and business allowed me to appreciate the various perspectives that come into play in the workplace, by understanding the different pressures faced by stakeholders in business decisions. The cross-cultural experience we got from our year-long exchange and the various opportunities to work with people of other backgrounds have definitely helped me relate to others in this ever more globalised world. In addition, the friendship and company of like-minded people in this course have helped us all further our potential, by forming a strong support network that spans across all engineering disciplines and sectors.

Seetoh Rui Ming, Daniel
Computer Science
Software Engineer, Grab
(Class of 2017)
REP graduates will have the potential to develop into next-generation Industry Leaders (including Chief Executive Officers/Chief Technology Officers) who will be at the forefront, enabled and well-positioned for the Grand Challenges of Engineering for the 21st Century.

With the broad-based interdisciplinary curriculum of the programme, REP graduates are well-equipped with the knowledge and skills to handle multi-faceted jobs in different industries.

**Engineering Organisations**
- Keppel DHCS / FELS
- Sembcorp Industries
- ST Engineering subsidiary companies

**Software/Tech Companies**
- BitTitan
- Grab
- Sea Group (Garena, Shopee)

**Electrical & Electronics Industry**
- PCI
- Schneider Electric Singapore
- Seagate Technology International
- Siemens
- Siltronic Silicon Wafer

**Banking and Finance Industry**
- Citibank
- Deutsche Bank AG
- Goldman Sachs
- JP Morgan

**Petrochemical Industry**
- ExxonMobil Asia Pacific
- Shell Eastern Petroleum

**Transport Sector**
- Land Transport Authority
- SBS Transit
- SMRT Corporation

**Start-Ups**
- Asia Risk Transfer Solutions Pte Ltd
- Computational Labour Economics Firm
- Daylight Studios
- Grain
- Smilesmith Dental Services Pte Ltd

**Public Administration & Defence Services**
- Building & Construction Authority
- DSO National Laboratories
- Economic Development Board
- Housing & Development Board
- JTC Corporation
- Ministry of Defence

REP graduates are employed for positions such as:

- Application Technologist
- Chief Executive Officer
- Chief Research Officer
- Crystal Growing Engineer
- Data Engineer
- Design and Systems Engineer
- Digital Business Integration Analyst
- Digital Transformation Project Leader
- Director, Co-founder
- Engineer, Commuter and Road Infrastructure
- Engineering & Scientific Officer
- Game Programmer
- Group Management Consulting Analyst

- Management Associate
- Materials Supply Analyst
- Process Technologist
- Product Design & Development Manager
- Reliability Engineer
- Software Design Engineer
- Software Developer
- Solids L&D Coordinator
- Structural Engineer
- Supply Chain Manager
- Technical Support Engineer
- Transport Planner
- Vice President
Renaissance Engineering Programme

Nanyang Technological University
Academic Block North, 61 Nanyang Drive, ABN-B2b-11
Singapore 637335
www.ntu.edu.sg/rep

For further enquiries, please contact
📞 (65) 6592 3183
📧 rep@ntu.edu.sg

Information is correct at time of printing (October 2018).
For updates, please refer to the website.