NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

Advance your learning. Stay Ahead.

Be Different.

SCHOOL OF MATERIALS SCIENCE AND ENGINEERING

HIGHER DEGREE PROGRAMMES

ABOUT NANYANG TECHNOLOGICAL UNIVERSITY

Young and research-intensive, Nanyang Technological University, (NTU Singapore) has 33,000 undergraduate and postgraduate students in engineering, business, science, humanities, arts, social sciences, education and medicine.

NTU is home to world-class institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, Singapore Centre for Environmental Life Sciences Engineering, and Wealth Management Institute – as well as leading research centres such as the Nanyang Environment & Water Research Institute and Energy Research Institute @ NTU.

The NTU Smart Campus is a living testbed of tomorrow's technologies set among one of the world's most beautiful university campuses. Besides its main campus in the western part of Singapore, NTU also has a medical campus in Novena, Singapore's healthcare district.

ABOUT SCHOOL OF MATERIALS SCIENCE AND ENGINEERING

RANKED WORLDWIDE #1

In the 2022 U.S. News
Best Global Universities
Rankings for Materials Science

At the School of Materials Science and Engineering (MSE), we guide our students on an intensive learning journey through motivation and the liberty of creativity. Our philosophy lies in our determination to break through the status quo of every student by exposing them to a field of practical learning apart from the realm of research and theoretical studies.

They will be able to explore new frontiers as they communicate within an indeterminate boundary of ideas across disciplines. In an engaging environment that encourages the creation of ideas and the freedom of scientific speech, students are nurtured into high caliber individuals in the field of Materials Science and Engineering.

RESEARCH ACHIEVEMENT

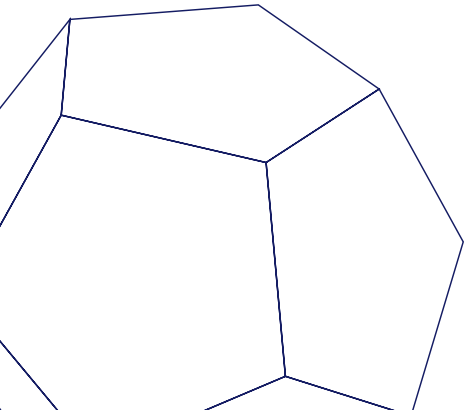
MSE has won more than $100 million in new research funding since 2017.
Some of these remarkable funded research projects are listed below:

- Cyber-Physiochemical Interfaces
- Molecular sensors for body fluid analysis
- Conformable interfaces and stretchable electrode
- Microprocessor-based Methods of Composite Curing
- Bio-inspired adhesives for wet environment: Molecular Designs to Applications
- Atomic Layer Deposition of High-Entropy Alloy 2D and 3D Coatings for Multifunctional
- Conformal electronic devices based on silk protein: Adding autonomy to an ancient material.
- Beyond MOORE – Negative Capacitance Field-effect Transistor for Ultra-low-power Electronics
- 3D Printing of Transparent Ceramics by Stereolithography Method Assisted with Hot Isostatic Press Process
- Structural Metal Alloys Programme (SMAP) - Study of length scale effects and interfaces on mechanical properties
- Manipulating Interfacial Process of Extracellular Electron Transfer in Bioelectrochemical Systems for Wastewater Energy Nexus
- Water-based rechargeable battery chemistries for new generation of safe, high energy density sustainable energy storage devices
- Accelerated Materials Development for Manufacturing — high-strength lightweight metals and soft magnetic materials for industrial applications

POSTGRADUATE AWARDS

MSE Doctorate Research Excellence Award honours those who have demonstrated outstanding research acumen with high impact publications and scholastic impact.

MSE Doctorate Technopreneur Award recognises inspired graduates who show technopreneurial spirit in using fundamental science to create solutions for industrial needs to meet market demands.



JOINT PHD PROGRAMMES

Under NTU's Joint PhD Programmes initiative which aims to promote transboundary and interdisciplinary research, the School of Materials Science and Engineering has joint partnerships with various international Universities. Linköping University (Sweden), University of Warwick (England) and Sungkyunkwan University (South Korea) are just a few of the world-renowned institutions that MSE has established joint programmes with.

RESEARCH AREAS

Biomaterials and Biomedical Devices
- Biomimetic Materials
- Bioadhesives
- Nano-Biomaterials
- Drug and Gene Delivery
- Bio-inks for 3D printing

Materials for Sustainability
- Solar Energy Harvesting
- Solar Fuels
- Energy Storage
- Recycling of Wastes
- Smart Food Additives

Computational Materials Science
- Computational Design of Materials
- Modelling and Simulation
- Computer-Assisted Process and Property
- Optimisation
- Plasmonics

Electronic Materials and Devices
- Active and Passive Devices
- Micro- and Nanoelectronics
- Multiferroic Materials
- Magnetic Nanomaterials
- Flexible Electronics

Functional Materials and Composites
- Defense Materials
- Polymer Nanocomposites
- Sports Materials
- Materials for Security
- Materials for Food and Agriculture

DOCTOR OF PHILOSOPHY (PH.D.) BY RESEARCH

Admission Requirements

- Applicants must have a relevant Bachelor's degree with at least a Second Class (Upper) Honours, Honours (Distinction) or equivalent, and the candidate must possess a demonstrated ability to pursue independent research in his/her proposed field of research.
- Applicants with total GRE scores (V + Q) equivalent to or more than 319 is required. Minimum GRE Analytical Writing Measure score (AW) must be equivalent to or more than 3.5.
  (Test dates must be within 5 years or less from the dates of application)
- Applicants from India may use GATE to replace GRE. Minimum GATE percentile score must be equivalent to or more than 90%.
  (Test dates must be within 3 years or less from the dates of application)
- Minimum TOEFL score must be equivalent to or more than 100 for internet-based test. Minimum IELTS score must be equivalent to or more than 6.5.
  (Test dates must be within 2 years or less from the dates of application)

Programme Structure

(compulsory for full time and part time students)

Coursework

- 18 Academic Units (AUs) (6 courses) with minimum CGPA of 3.5
- 18 Academic Units (AUs) (6 courses) with minimum CGPA of 4.0 for Nanyang President's Graduate Scholar
- PLUS HWG 703 Graduate English, HWG 702 University Teaching for Teaching Assistants and MS 8001 Graduate Communication Course
- Publish at least one journal paper before graduation

Research

- PhD qualifying examination and confirmation by end of year 2
- Complete submission of thesis for examination
- Final oral examination

Candidature Period

Full time: 2 years minimum / 5 years maximum

Part time: 3 years minimum / 5 years maximum

Intake

August
Application period: 1 October - 31 January

January
Application period: 1 June - 31 July

Research Scholarships

NTU offers a number of scholarships to new PhD students pursuing full-time postgraduate studies.
Please refer to :

MASTER OF ENGINEERING (M.ENG.) BY RESEARCH


*photograph courtesy of HTX

Admission Requirements

- Applicants must have a relevant Bachelor's degree with at least a Second Class (Upper) Honours, Honours (Distinction) or equivalent.
- Applicants with total GRE scores (V + Q) equivalent to or more than 319 is required. Minimum GRE Analytical Writing Measure score (AW) must be equivalent to or more than 3.5.
  (Test dates must be within 5 years or less from the dates of application)
- Applicants from India may use GATE to replace GRE. Minimum GATE percentile score must be equivalent to or more than 90%.
  (Test dates must be within 3 years or less from the dates of application)
- Minimum TOEFL score must be equivalent to or more than 100 for internet-based test. Minimum IELTS score must be equivalent to or more than 6.5.
  (Test dates must be within 2 years or less from the dates of application)

Programme Structure

(compulsory for full time and part time students)

Coursework

- 9 Academic Units (AUs) (3 courses) with minimum CGPA of 3.0

Research

- Confirmation by end of year 1
- Complete submission of thesis for examination
- Final oral examination

Candidature Period

Full time: 1 year minimum / 3 years maximum

Part time: 1 year minimum / 3 years maximum

Intake

August
Application period: 1 October - 31 January

January
Application period: 1 June - 31 July

MASTER OF SCIENCE (M.SC.) BY COURSEWORK (MATERIALS SCIENCE AND ENGINEERING)

Programme Overview

The Master of Science in School of Materials Science and Engineering is intended to equip students with the latest postgraduate level knowledge in Materials Science and Engineering.

This programme will use the latest online learning tools and the students can select any combination of these courses [with conventional face-to-face courses available] to make up the required total of 30 AUs across the wide selection of courses offered in the curriculum.

The students must fulfil a minimum of 30 Academic Units (AUs) to be awarded a Master of Science degree.

Admission Requirements

- Have a good Bachelor's degree in Engineering or equivalent in a related discipline.
- Good Polytechnic qualifications in materials science and engineering or closely related major, with a substantial number of years of relevant working.
- A good TOEFL/IELTS score for applicants whose native language is not English. Test dates must be within 2 years or less from date of application.
  TOEFL : 600 / 100 *(Paper / Internet)*
  IELTS : 6.5 *(Academic)*
  GRE is not required for MSc programme *(by coursework)*

Candidature Period

Full time: 1 year minimum / 3 years maximum

Part time: 2 years minimum / 4 years maximum

Intake

August
Application period: 1 November – 28 February

January
Application period: 1 July – 30 September

Tuition fee

Courses

FLEXIMASTERS COURSES

Programme Overview

For Singapore Citizens and Singapore Permanent Residents, there is an option of taking the courses through the SkillsFuture programme, which are stackable towards a Master of Science degree over time.

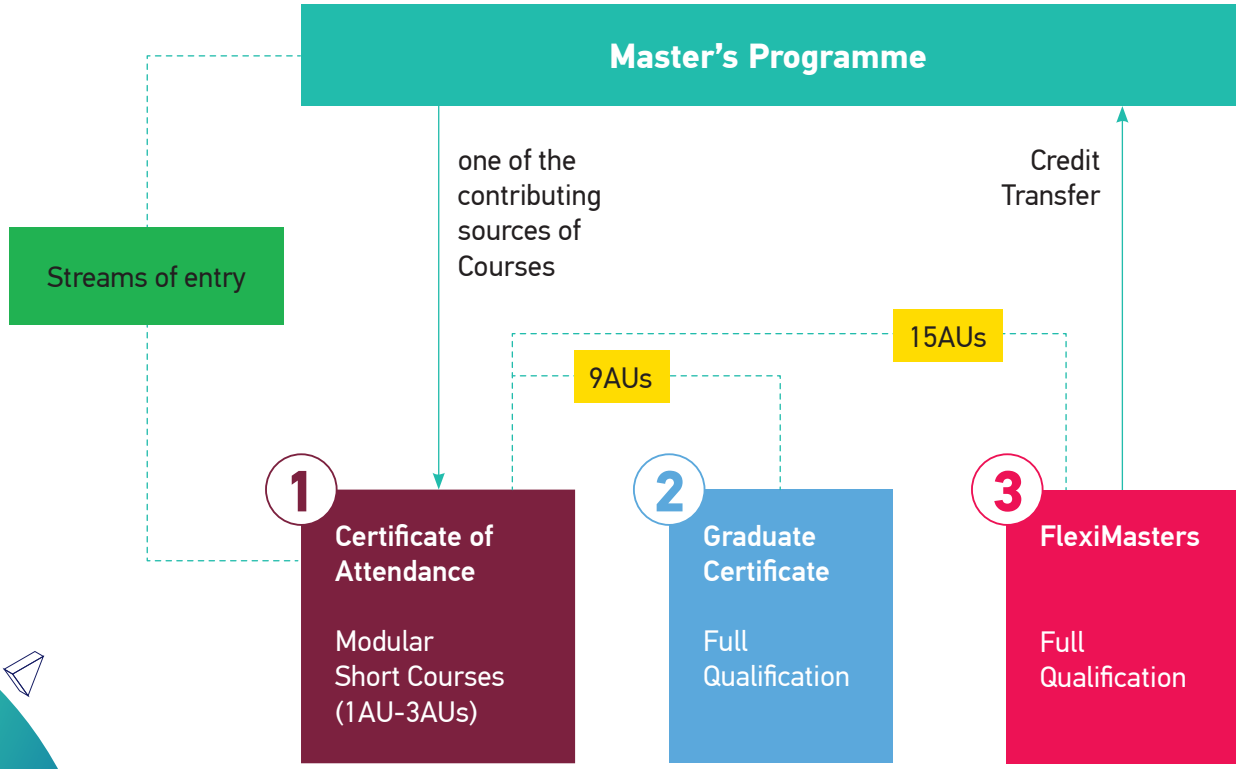
Completely stackable module

Fulfilment of the minimum Academic Units (AUs) will qualify for a Graduate Certificate (9AUs) or a FlexiMasters (15AUs).

Option for "no-exams"

Flexibility for those who desire to take only selected modules for personal development on a non-examinable basis.
*Certificate of Attendance will be awarded to the successful participants upon course completion.

Modular Short Courses Leading to Full Qualifications



CONTACT US

Our
Website

Online Application
only for Ph.D and
M.Eng by Research

Online Application
only for M.Sc by
Coursework

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