NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

MSE

School of Materials Science and Engineering

Materials for Today's Industry and the Future Economy

A REWARDING CAREER BEGINS WITH A **WORLD-CLASS EDUCATION**

Start your career on the right track with an education from the **School of Materials Science and Engineering (MSE)**, a world leader in materials engineering studies. This is your learning ground for discovering the structure and properties of various materials, then mastering how to design, process and enhance them for real-world applications.

Ranked #1 worldwide

in the 2019 US News Best Global Universities Rankings for Materials Science

3rd in the world

according to the 2019 QS World University Rankings for Materials Science

QS WORLD UNIVERSITY RANKINGS

Largest

materials engineering school in the world

NTU MSE degrees are recognised worldwide and accredited by the **Engineering Accreditation Board**

MSE PROGRAMMES

MSE offers single, second major and double degree programmes:

Bachelor of Engineering	Materials Engineering
Bachelor of Engineering	Materials Engineering with a Second Major in Medical Biology
Bachelor of Engineering	Materials Engineering with a Second Major in Pharmaceutical Engineering
Bachelor of Engineering	Materials Engineering with a Second Major in Business
Bachelor of Engineering	Materials Engineering with a Minor in Business
Bachelor or Engineering	Materials Engineering with a Minor in International Trading

Double Degree in Bachelor of Engineering (Materials Engineering) and Bachelor of Arts (Economics)

SKILLSfuture

MSE also offers the **SkillsFuture Work-Study Programme** for Bachelor of Engineering (Materials Engineering).

Specialisations

Dive into specialised fields and niche areas in Materials Science and Engineering:

- Industrial Materials Engineering
- Innovation and Intellectual Property
- Medical Materials
- Nanoscience and Nanotechnology

CAREER **PROSPECTS**

MSE graduates are innovators and entrepreneurs. They build their careers across a broad spectrum of industries: Aerospace, Biotechnology & Pharmaceutical, Consumer Business, Electronics, Energy and Chemicals, Logistics & Supply Chain, Medical Technology, Natural Resources, Oil & Gas, Urban Solutions & Sustainability.

TECHNOLOGY / ENGINEERING

- BOSCH
- Rolls-Royce
- SAMSUNG

ENERGY AND CHEMICALS / URBAN SOLUTIONS & SUSTAINABILITY

- EVONIK POWER TO CREATE
- REC
- SURBANA JURONG
- SUNSEAP
- sembcorp

CONSUMER BUSINESS

- 3M
- Nestlé
- P&G Procter&Gamble
- Unilever

OIL & GAS

- Chevron
- ExxonMobil
- Schlumberger
- Shell

ELECTRONICS

- GLOBALFOUNDRIES
- Micron
- APPLIED MATERIALS
- FLASH
- Infineon
- Schneider Electric

BIOTECHNOLOGY / PHARMACEUTICAL / MEDICAL TECHNOLOGY

- ThermoFisher SCIENTIFIC
- Johnson & Johnson
- NOVARTIS
- Roche
- gsk GlaxoSmithKline
- BD

AEROSPACE / DEFENCE

- DSO National Laboratories
- MINDEF SINGAPORE
- DSTA Defence Science & Technology Agency
- ST Engineering
- SIA ENGINEERING COMPANY

CURRICULUM (Total AU: 140/141*)

CORE MODULES
- Fundamental Sciences and Mathematics
- Basic Materials
- Advanced Materials
- Professional Internship
- Final Year Project

GENERAL EDUCATION REQUIREMENTS (GER)
- Core
- Electives

CORE ELECTIVES AND UNRESTRICTED ELECTIVES

*** Students without H2 Level Physics will take a Physics core module with 4 AUs instead of 3 AUs.**

CORE AND GER CORE MODULES:

YEAR 1	• Physics • Mathematics • Materials Chemistry • Materials Chemistry II • Materials Physics • Materials Science • Thermodynamics of Materials	• Introduction to Computational Thinking • Introduction to Sustainability • Materials and Man • Management with Humour • Science, Technology and Society
YEAR 2	• Mathematics II • Electronic and Magnetic Properties of Materials • Introduction to Manufacturing Processes • Materials Structure and Defects • Mechanical and Behaviour of Materials • Phase Transformation and Kinetics • Polymers and Composites	• Laboratory II A • Laboratory II B • Introduction to Data Science and Artificial Intelligence • Engineering Communication I • Ethics and Moral Reasoning • Kickstart your Career Success
YEAR 3	• Analysis of Materials • Environmental Effects on Materials • Materials Aspect in Design • Metallic and Ceramic Materials • Micro / Nanoelectronic Materials Processing	• Laboratory III • **Professional Internship** • Engineering Communication II • Enterprise and Innovation
YEAR 4	• Biomaterials • Nanomaterials: Fundamentals and Applications	• Quality Control • **Final Year Project** • Engineers and Society

Tay Ji Qin Joseph
Materials Engineering

"MSE provides students with a diverse range of knowledge and opportunities. You have the flexibility to pursue your own interests, and the curriculum will give you time to consider what you value most in life. A degree from MSE, along with the guidance of our outstanding professors, will open many windows to the industries you want to build a career in."

Information is correct at time of print. For the most updated information, visit www.mse.edu.sg.

HOLISTIC **STUDENT LIFE**

MSE provides myriad opportunities for students to excel academically, while developing the life skills they need to realise their fullest potential.

Under**GR**aduate **P**rogramme for **H**olistic **E**ducation **and E**xperience is MSE's undergraduate leadership programme. Through purposeful activities such as workshops on leadership, management and soft skills, students are prepared to be well-rounded future leaders.

Contribute to the MSE Community
Be engaged in school activities and make lifelong friends.

Overseas Exchange Programmes
Broaden your perspectives and develop a global outlook.

Industry Visits and Alumni Networking Events
Gain insights into industry practices, build relationships and further your career.

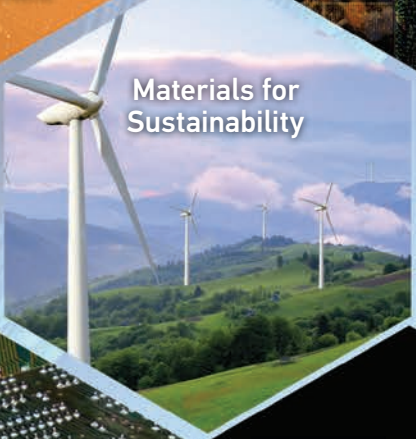
Competitions and Conferences
Apply your knowledge and skills, locally and across the globe.

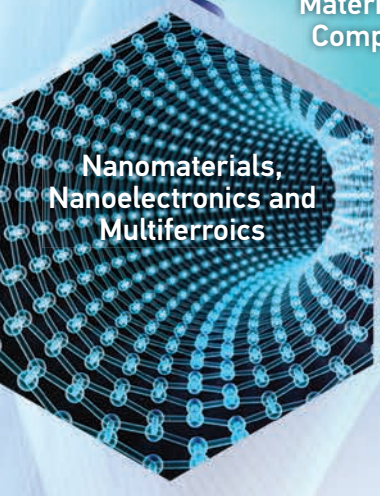
Community Involvement Programme
Learn through service, give back to society.

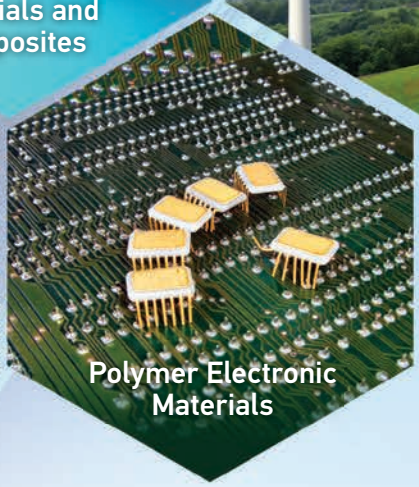
GRADUATION

WELCOME TO NTU MSE!

MATERIALS FOR TODAY'S INDUSTRY AND THE FUTURE ECONOMY







CONNECT WITH US!

msestudentlife@ntu.edu.sg
www.mse.ntu.edu.sg
@ntumse
@ntu_mse

School of Materials Science and Engineering (MSE)
Nanyang Technological University
50 Nanyang Avenue Block N4.1, Singapore 639798
Tel: 65 6790 4142