



Biomedical Engineering

Overview

Singapore has established itself as a strategic hub for medical technology (MedTech) manufacturing. An ageing population, global health pandemics, chronic diseases, greater health awareness and the growing affluence of the population have collectively led to an increase in demand for high quality MedTech products and biomedical services, presenting tremendous career opportunities for holders of this diploma.

Today, many job positions in the biomedical and life sciences industry require multi-disciplinary skills. For instance, a biologist would need the concepts and tools of a chemist and a physicist as well as the ability of an engineer to solve major problems. Hence, this course, which includes a multi-disciplinary blend of biology, chemistry and engineering, as well as integrated training in biological techniques and biomedical instrumentation, will give you many exciting career options.

The unique multi-disciplinary nature of this course, coupled with Singapore's push to become a world-class biomedical hub, will ensure a bright future for you.



Career Opportunities

World renowned MedTech companies have set up a base in Singapore, opening up many lucrative job opportunities in the field of manufacturing, regulatory sciences and clinical services. Additionally, Singapore also serves as a one-stop service centre for innovative healthcare solutions. Together with the growing demand for healthcare professionals and medical equipment amidst the worldwide pandemic, there will continue to be a strong demand for biomedical and MedTech professionals well into the next century.

You will have exciting and lucrative career prospects as:

- Biomedical Technical Officers
- Biomedical Design Engineers
- Application / Service Engineers
- Imaging Specialists
- Medical Product Specialists
- Medical Technologists
- Medical Sales & Marketing Executives
- Regulatory Affairs Executives

Entry Requirements

5 GCE 'O' Level subjects comprising:

English Language (EL1)	(Grades 1-7)
Mathematics (E or A Maths)	(Grades 1-6)
One of the following subjects *	(Grades 1-6)
Any two other subjects (except CCA)	--

* *Biology, Biotechnology, Chemistry, Combined Science, Computing / Computer Studies, Design & Technology, Electronics / Fundamentals of Electronics, Physics / Engineering Science, Science (Chemistry, Biology), Science (Physics, Biology), Science (Physics, Chemistry) / Physical Science.*

Note: Applicants should not be suffering from mild or severe colour vision deficiency, uncontrolled epilepsy, profound hearing loss or severe vision impairment.

Diploma Core Subjects

Year 1:

- Circuit Analysis
- Computer Programming for Problem Solving
- Digital Fundamentals 1 & 2
- Electronic Devices & Circuits
- Electronic Prototyping
- Engineering Mathematics 1 & 2
- Engineering Physics

Year 2:

- Chemistry
- Data Visualisation & Analytics
- Engineering Mathematics 3
- Human Anatomy & Physiology
- Medical Devices
- Medical Device Manufacturing Practices
- Medical Electronics
- Medical Imaging & Informatics
- Microcontroller Applications

Year 3:

- Major Project
- Medical Device Manufacturing Practices

Elective Clusters:

- Advanced Engineering Skills
- Biomedical Design & Devices
- Clinical Equipment & Process
- Healthcare Informatics
- TP-SUTD University Pathway Programme



Further Studies

You can gain admission into a wide range of degree programmes at local and overseas universities such as those in USA, UK, Australia and New Zealand. Advance standing for specific modules or up to 2 years exemption may be given depending on the relevance of the degree programme.

You can also join the University Pathway Programme which allows you to take university modules in your final year of this course, and get a one-year exemption for selected degree courses at local universities.

Success Stories

Joshua Teo Han Wei, who graduated from this diploma course in 2012, was admitted to the Yong Loo Lin School of Medicine at NUS in 2014. The former student of Geylang Methodist Sec School finally fulfilled his childhood dream to be a medical doctor when he obtained his MBBS in 2019, becoming the first Engineering student from TP to do so. After serving his housemanship at Khoo Teck Puat Hospital, Joshua hopes to set up his own medical practice eventually.





An A*STAR Science Award recipient, **Amanda Er Tse Wern** was glad to have worked alongside experienced scientists during her internship at the Institute of Bioengineering and Nanotechnology in the second year of her Biomedical Engineering (BME) diploma course – an experience which she found enriching and eye-opening.

After graduating in 2014, she was awarded the MOH Healthcare Merit Award scholarship to do a degree in Radiography & Medical Imaging at Monash University, Australia. Amanda attributes her achievement to her diploma training: “My BME course has equipped me with abundant theoretical knowledge and highly practical skills which can be applied to solve real problems, making me a more competent and confident individual in every aspect of my life,” she reflects.

Core Strengths

This course equips you with the unique ability to integrate various multi-disciplinary areas to serve the escalating demands of the exciting and diverse medical technology industry. There is wide coverage of medical instruments and high-tech medical equipment (not found in other biomedical diploma courses) which is extremely useful for a career or further studies in the medical or MedTech field.

As a testimony to its high industry relevance as well as the comprehensive and rigorous training it provides, this diploma is recognised for admission into the Medicine degree programme at NTU, and the Diagnostic Radiology, Radiation Therapy, and Speech Therapy, as well as various other relevant degree programmes, at local and overseas universities.

Student Life & Facilities

Your life on campus will be varied and vibrant. Sporting competitions, artistic pursuits, adventure learning programmes, team building games, student club gatherings, as well as the annual Campus Care Network Day carnival when students and staff join forces to raise funds, are some of the many colourful and exciting activities that will pepper your life as a student.

Located in a picturesque environment that is close to nature, the campus provides you with the ideal setting for work, play and recreation.



Always at the forefront of technology, the School emphasises innovation, creativity, problem-based learning and a practical, hands-on approach. With a wide range of modern and well-equipped facilities, and a rigorous and industry-relevant curriculum, we are well positioned to prepare you for a bright future.

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School of Engineering

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