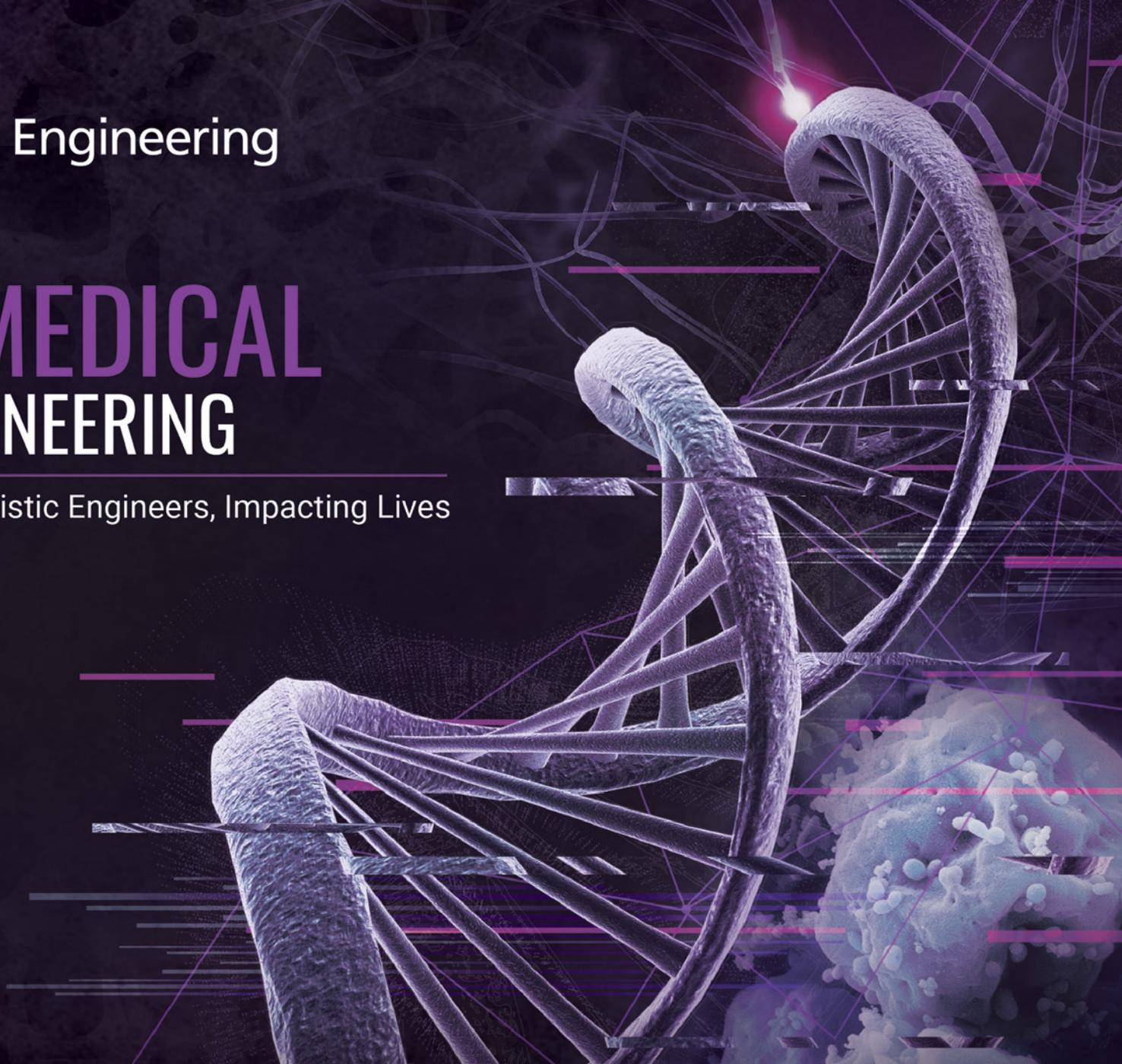NUS | Engineering
National University of Singapore

BIOMEDICAL
ENGINEERING

Nurturing Holistic Engineers, Impacting Lives

What is Biomedical Engineering? »

Biomedical engineering integrates the principles of engineering disciplines with biomedical sciences, fosters new knowledge and achieves leadership in research through the development of novel technologies and innovative applications.

We equip engineers with the ability to analyse problems from both engineering and biomedical perspectives. We advance scientific discovery, and develop new technologies through cutting-edge research and integrated education. By understanding unmet clinical needs and translating our research to the bedside, we improve diagnostics and therapy.
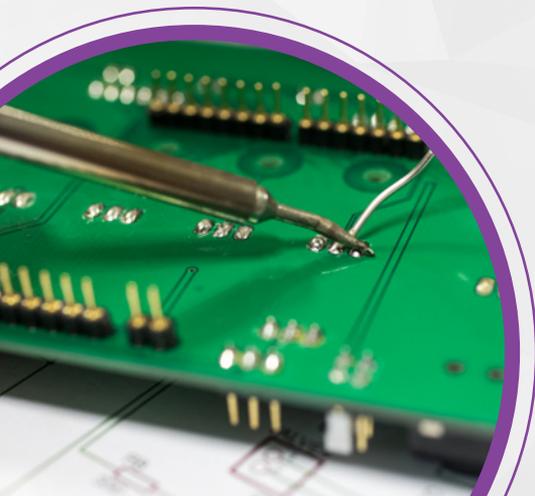
Programme »

The NUS Biomedical Engineering programme aims to develop engineers who will be able to analyse problems from both an engineering and biomedical science perspective.

Students will be educated on the fundamentals and methodologies in electrical, chemical, mechanical and material engineering, with a focus on their application to biomedical problems. This would enable our students to have both the foundation and versatility to develop effective and practical solutions relating to human health.

The course also includes and cultivates:

- Design-based and research-based projects aimed at promoting creativity, innovative thinking, resourcefulness, and application of theories
- Analytical problem-solving and critical thinking skills to tackle challenging problems in industry or research
- Professionalism and ethics in engineering, legal and regulatory affairs
- Broad-based skills in leadership, teamwork, and management

During the course, students will be exposed to various areas in the field of biomedical engineering, such as:

BIOMATERIALS/ TISSUE ENGINEERING
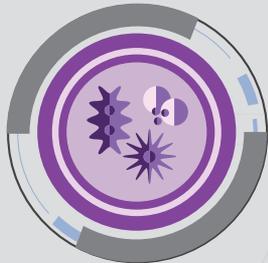
BIOMECHANICS

BIOMEDICAL ELECTRONICS AND IMAGING

Career Prospects

NUS Biomedical Engineering graduates can look forward to joining the medical device and biotechnology industries, healthcare sectors, research institutes, government agencies and universities.

Beyond engineering, a significant part of the curriculum is also set aside for non-engineering domains such as management, organisation, intellectual properties, and regulatory affairs. Our graduates have also built careers in these fields: patent law, RA/QA/QC, clinical coordination, project management, product development and startups.

With the cross-disciplinary training, students will also be well-equipped to explore careers in other areas or further their studies in prestigious graduate programmes across a wide range of biomedical science-related disciplines, including medicine.

Developed by NUS Biomedical Engineering, Esoglove is a smart robotic glove that assists and rehabilitates patients who have lost hand functions due to injuries or nerve-related conditions.

Words from our Graduates »

I am currently leading a team of service engineers and overseeing the service delivery of GE Healthcare products in Singapore. My undergraduate study in NUS Biomedical Engineering helped me develop a strong passion in healthcare. It is exciting and fulfilling to work on technologies that enable better patient care. The NUS Biomedical Engineering programme helped me build a solid and all-rounded foundation for my professional career.

Allen Hu Dong, Class of 2012
Service Manager,
GE Healthcare

The undergraduate programme at NUS Biomedical Engineering gave me a broad-based education by exposing me to a multitude of disciplines, such as biochemistry, cell biology, electronics, biosensors, materials science and mechanics.

The course has certainly prepared me well for my present job. At the same time, I also made good friends who went on to build a career in life science or medical related industries.

David Ng Kian Siang, Class of 2007
Patent Scientist,
Donaldson & Burkinshaw

Through the NUS Biomedical Engineering programme, I got to learn cell biology and engineering, which interest me so much; in fact I love every single module that was taught in class.

The small size of the department made it possible for the professors to get to know their students better and for fellow students to also know one another well.

Grace Pohan, Class of 2013
Manufacturing Engineer,
Baxter BioScience Manufacturing SARL

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