NEWS RELEASE

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NTU Singapore refreshes medical school curriculum with new injections in digital health, AI and data analytics

Medical humanities education also expanded to train future-ready doctors to be agile

From 2024, students enrolling in the **Lee Kong Chian School of Medicine (LKCMedicine)** at **Nanyang Technological University, Singapore (NTU Singapore)** will learn from a refreshed curriculum with more course content related to artificial intelligence (AI) and digital health as these solutions continue to drive healthcare delivery.

The medical school at NTU Singapore will implement more tech-enabled teaching tools throughout its five-year Bachelor of Medicine and Bachelor of Surgery (MBBS) degree programme to help students become doctors who are discerning and confident users of technology.

This tech focus will be balanced out by an expanded scope in medical humanities, which trains medical students to be doctors who are agile and adaptable in navigating uncertainties and difficult situations in their practice, and to deliver compassionate and patient-centred care.

In addition, **NTU LKCMedicine will adopt the University Clinical Aptitude Test (UCAT)** as part of the school's admissions process, in place of the BioMedical Admissions Test (BMAT), to ensure that students have the personal qualities required for a career in medicine.

This refreshed curriculum comes on the back of the rapidly developing digital age, and aims to expose students to the digital health solutions and AI-powered medical technology that are increasingly deployed in the healthcare setting.

It builds on the distinctive features of LKCMedicine's MBBS programme, such as team-based learning and early patient interaction training through the clinical communication curriculum.

Students are also prepared for medical practice in a globalised world through a six-week overseas elective at an overseas hospital or medical school of their choice, supported by a LKCMedicine Travel Grant.

Professor Joseph Sung, NTU Senior Vice President (Health & Life Sciences) and Dean, LKCMedicine, said: "NTU LKCMedicine's award-winning[1] curriculum has prepared our students to be doctors you and I would like to have caring for us. Our graduates have been recognised for their excellent performance in hospitals here, with many receiving positive feedback from fellow doctors and patients for their teamwork, clinical, and empathetic communication skills. Many of them are also training to be specialists. For example, 90% of our pioneer Class of 2018 are accepted for postgraduate specialist training. This is testament to our robust curriculum, and we are proud that they have been flying our flag in Singapore and beyond."

"With our refreshed curriculum that combines more course content in artificial intelligence and digital health, with a stronger patient-centred curriculum, and more opportunities for global exposure, we are training future-ready doctors who can respond to rapid changes in healthcare and understand the increasingly globalised nature of medicine."

Training doctors to be discerning and confident users of technology

Currently, digital health is a single module that students have to take in their first two years of the MBBS degree programme. From 2024, this will be integrated throughout the five-year curriculum as vertical courses.

These vertical courses will introduce areas such as medical data science, data analytics, and artificial intelligence (AI) to the practice of medicine.

This update to the curriculum, will help students develop a firm foundation in the ethical and legal consequences of AI and healthcare informatics and be aware of both its limits and benefits, as well as hands-on exposure to AI and medical technologies such as telehealth, health apps and wearables, and personalised molecular medicine.

More **tech-enabled learning tools** will also be deployed to enhance learning for LKCMedicine students.

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[1] LKCMedicine is the first in Singapore and fourth in Asia to win the **ASPIRE Award** for excellence in curriculum development in 2021. The ASPIRE Award is the only award of its kind to recognise schools for excellence in medical education. The Award acknowledges LKCMedicine's well-articulated educational principles, balanced approach to assessment, the emphasis on team-based learning and early exposure to clinical experience, as well as its innovative use of technology to enhance learning.

For instance, the school's anatomy department is piloting **a new virtual reality learning tool for the heart** in the new academic year to teach first-year students about the cardiorespiratory system. This is on top of the plastinated cadavers, 3D virtual and printed models, and radiological imaging tools that are regularly used in anatomy classes.

Custom-built e-simulators for drug prescription and using electronic medical records (that are currently used in hospital setting) are also being developed to prepare graduating students to be ready for practice as a doctor in hospitals.

This emphasis on digital technologies in healthcare and the use of more tech-enabled learning tools will help to cultivate doctors of the future who are well-versed with such tools and can tap on technology effectively.

Even as digital tools continue to revolutionise the healthcare setting, a doctor's human touch remains important in the delivery of care. To this end, LKCMedicine will strengthen its emphasis on developing doctors who can manage change and give patient-centred care by expanding the scope of medical humanities in the curriculum.

Training doctors to be adaptable and agile

Medical humanities uses concepts from the Arts, Humanities and Social Sciences disciplines to enable students to manage clinical uncertainty and adapt to changes in healthcare practice.

Currently taught in the first two years of the MBBS degree programme, the medical humanities curriculum is being reviewed and will expand to be integrated across the five years of the MBBS from 2024.

In the **new medical humanities curriculum**, students will learn concepts, analytical methods and approaches that directly complement and expand upon the biomedical dimensions of clinical knowledge and skill acquisition.

Professor Jennifer Cleland, Vice-Dean (Education), LKCMedicine said "Medicine is moving at a tremendous rate, with AI and digital health tools increasingly deployed in the clinical setting. Part of the LKCMedicine mission is to produce graduates who can manage this change and adapt to new ways of working, while still keeping the patient at the centre of their decision-making. Through this increased emphasis on using the humanities to learn, students will develop adaptability and resilience, which will in turn help them provide care that is effective and patient-centred.

"For example, as students start interacting with AI in the clinical environment, many may embrace AI and technology as a means of gaining control over medical

uncertainty, which may lead to a lower level of patient-centred care. Medical humanities can help to equip them with foundational skills to gain control over uncertainty and help students to critically engage with technology."

The medical humanities programme builds directly on the School's strong focus on early clinical and workplace experience within a patient-centred curriculum. It enhances current learning opportunities, such as early patient interaction, hospital and polyclinic placements and the "Long-term Patient Project", by providing students with conceptual frameworks to analyse and learn from their experiences, and prepare them for their senior years and practice as a doctor.

Change in admissions test

On top of these changes in the curriculum, LKCMedicine will also adopt the **University Clinical Aptitude Test (UCAT)** as part of LKCMedicine's admissions process, in place of the BioMedical Admissions Test (BMAT), from 2024.

The UCAT allows the School to assess potential students holistically – both academically and non-academically, including the personal qualities required for a career in medicine, such as compassion, team working skills, problem solving and integrity.

Students who wish to enrol in LKCMedicine next year will have to register and sit for the UCAT by 21 September this year.

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About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

Ranked amongst the world's top universities, the University's main campus is also frequently listed among the world's most beautiful. Known for its sustainability, NTU has achieved 100% Green Mark Platinum certification for all its eligible building projects. Apart from its main campus, NTU also has a medical campus in Novena, Singapore's healthcare district.

For more information, visit www.ntu.edu.sg