NUS National University of Singapore | Yong Loo Lin School of Medicine

MASTER OF SCIENCE IN

PRECISION HEALTH AND MEDICNE

Transforming Healthcare with Artificial Intelligence and Big Data

WELCOME TO THE MASTER OF SCIENCE IN PRECISION HEALTH AND MEDICINE

MSc PHM, a transformative programme at the forefront of healthcare innovation, is revolutionising how we understand and advance human health. By uniting biomedical sciences, artificial intelligence (AI), big data analytics, engineering, and the humanities, it provides a powerful, multidisciplinary lens to examine health and disease at the molecular level. This data-driven approach fuels the discovery of novel biomarkers, the creation of predictive algorithms, and the design of innovative diagnostics and targeted therapies — ushering in a future of healthcare defined by precision in prevention, prediction, screening, diagnosis, prognosis, and treatment.

Our comprehensive, multidisciplinary curriculum prepares outstanding applicants from STEM, medicine, and even quantitative humanities to harness the full potential of AI and data-driven healthcare.

Students gain experience in predictive analytics, algorithm design, and precision treatment solutions, while also engaging with ethical standards, regulatory compliance, and sustainable business practices. Taught by leading academics, clinicians, and industry experts, this integrated training equips graduates to deliver real-world impact — designing and applying innovative solutions that advance precision across the healthcare spectrum.

What truly distinguishes our programme is the hallmark capstone experience, tailored to students' career aspirations. Whether through groundbreaking academic research or immersive industry collaborations with precision medicine organisations and technology partners, you will gain invaluable hands-on experience and the opportunity to contribute to real-world advances in precision medicine.

If you are passionate about pushing boundaries and driving meaningful change, we invite you to join us. Together, let us pioneer the future of precision health and medicine — for patients, communities, and the world.

Associate Professor Tan Tin Wee

Co-Director, MSc Precision Health and Medicine

Della Suantio Lee Professorship in Mental Health and Digital Science, Mind Science Centre, Psychological Medicine, Medicine

Associate Professor Caroline Lee

Co-Director, MSc Precision Health and Medicine

Vice Dean, NUS Graduate School

Associate Professor Kenneth Ban

Co-Director, MSc Precision Health and Medicine

Associate Professor, Department of Biochemistry, National University of Singapore

PROGRAMME AT A GLANCE

The Master of Science in Precision Health and Medicine (MSc PHM) at the NUS Yong Loo Lin School of Medicine is a coursework-based programme that equips you to harness biomedical data and deliver more precise, predictive, and personalised healthcare.

Recognised by Singapore's Ministry of Health under the Research, Innovation and Enterprise (RIE2025) strategic plan, the programme develops deep expertise in genomics, proteomics, AI, big data analysis, and drug discovery — preparing you to drive innovation in precision health.

With teaching from academic and clinical leaders, research institutes, and biotechnology industry experts, MSc PHM offers a rare blend of academic depth and real-world insight — empowering you to lead advancements across healthcare, research, and biomedical technology.

Asia's First Multi-disciplinary Programme in Precision Medicine

Build a cross-cutting skillset in genomics, proteomics, AI, big data, and drug discovery to meet the demands of tomorrow's personalised healthcare.

Learn from Academic, Clinical and Industry Experts

Be taught by leading faculty from NUS Medicine, Singapore's top research centres, and global biotech firms for an integrated perspective of science and practice.

Tailored Learning Through Electives and Capstone Project

Personalise your learning journey with specialised electives and a capstone project that brings your skills into real-world impact — guided by experienced mentors.

Internationally Recognised Master's Degree

Receive a world-class education at Asia's leading medical school, and gain an exceptional opportunity to pursue advanced medical education.

STUDY MODE

Full-time	**1 year**
Full-time with a Capstone Project	**2 years**
Flexible Part-time	**2 years**

TUITION FEES

For AY2026/2027:

S$71,500 (incl. GST)

PROGRAMME STRUCTURE

Core Courses	Study Modes		
	Full-time	**Full-time with Capstone Project**	**Part-time**
Complete 6 core courses PHM5001 Human Genomics in Precision Medicine PHM5002 Proteomics and Metabolomics in Precision Health and Medicine PHM5003 Applied Statistics for Precision Medicine PHM5004 High Performance Computing for Precision Medicine PHM5005 AI and Machine Learning for Precision Medicine PHM5006 Ethics, Regulation and Managerial Economics in Precision Medicine	**Choose a combination of 4 elective courses**	**1 Capstone Project from Academic or Industry Project** AND **Choose a combination of 2 elective courses**	**Choose a combination of 4 elective courses** Executive Certificates and Graduate Certificates available for Stackable Pathway
24 units in total	**16 units in total**		
Total: 40 Units To Graduate			

Explore the programme curriculum, study plan, and other details on our programme webpage.

CORE COURSES

PHM5001

Human Genomics in Precision Medicine

- Understand the genetic/genomic basis of diseases (inherited, complex, infectious)
- Apply OMICs tools to identify biomarkers and predict disease outcomes
- Develop genomic strategies to prevent and treat human diseases

PHM5002

Proteomics and Metabolomics in Precision Health and Medicine

- Understand experimental workflows, instrumentation, and data quality control procedures
- Learn from real-world applications, deploy proteomic and metabolomic profiling methods
- Explore current practices and future trends in precision medicine

PHM5003

Applied Statistics for Precision Medicine

- Apply statistical methods to interpret precision medicine datasets
- Learn experimental design and data quality assessment
- Build skills to analyse and extract insights from complex data

PHM5004

High Performance Computing for Precision Medicine

- Understand HPC architecture and workflows in omics research
- Accelerate analytical pipelines using parallel computing approaches
- Gain practical skills to process big data

PHM5005

AI and Machine Learning for Precision Medicine

- Apply AI / ML tools to pre-process and analyse complex health data
- Build and evaluate predictive models for precision healthcare
- Learn to extract insights and explain outputs from AI models

PHM5006

Ethics, Regulation and Managerial Economics in Precision Medicine

- Apply ethical frameworks to real-world cases in genomics and big data
- Understand regulation of health products and patient decision-making
- Learn economic concepts shaping access and value in precision care

For the full breakdown of core and elective courses, visit our programme webpage.

CAREER POSSIBILITIES

- Research Scientists
- Bio Informaticians
- Data Analysts
- Medical AI Engineers
- Medical Algorithm Engineers
- Medical AI Machine Learning Engineers
- Scientific Writers
- Scientific Communications
- Journal Editors

TRUSTED VOICES

"The MSc PHM programme has given me the tools to not only understand precision medicine but actively contribute to its evolution... (it) has been an enriching experience that combines rigorous training with hands-on industry exposure."

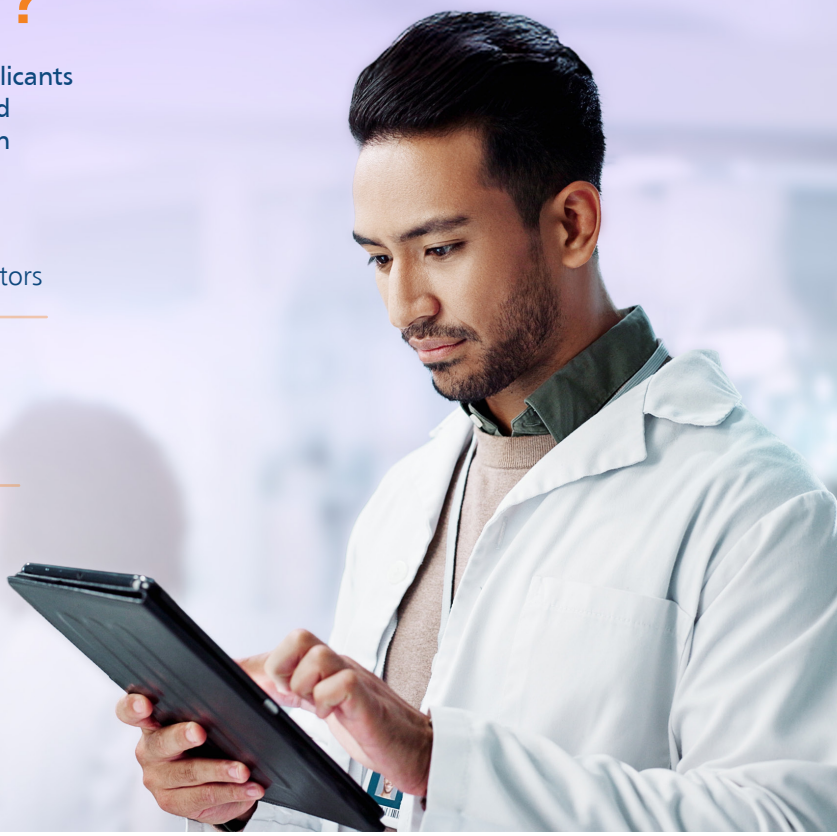
- Jeremie Theddy Darmawan, Class of 2024

"Precision health isn't just the future — it's happening right now. If you want to be at the forefront of change, this programme will give you the knowledge and tools you need."

- Dr. Divya, Class of 2024

WHO SHOULD APPLY?

The programme welcomes **local and international** applicants with a strong interest in advancing precision health and medicine — particularly those with a foundation in both quantitative and biomedical sciences. It is ideal for:



Healthcare professionals

such as doctors, healthcare workers, and medical educators

Industry professionals

including scientific writers, medical sales and marketing personnel, and corporate or government policymakers

Researchers and analysts

seeking roles as precision medicine scientists, bioinformaticians, or data analysts

Working professionals

looking to upskill or transition into the precision medicine field through a flexible learning format

KEY ADMISSION REQUIREMENTS

Academic and Professional Background

Bachelor's (preferably Honours) degree in M.B.B.S. or in a STEM discipline — Science, Technology, Engineering, Mathematics — or a related field such as Health Sciences or Life Sciences

Other qualifications with relevant industry experience may be considered on a case-by-case basis

Language Proficiency

International applicants whose undergraduate education was not conducted in English must demonstrate proficiency with a minimum TOEFL score of 85 (Internet-based) or an IELTS Academic score of 6.0

Please note that admission is competitive, and meeting the minimum requirements does not guarantee entry into the programme.

REQUIRED DOCUMENTS FOR APPLICATION

- Statement of Purpose showcasing academic strength, research interests, motivation to study, and long-term development goals
- Curriculum Vitae (CV) providing an overview of relevant experience, skills and qualifications, and accomplishments
- Degree Certificate and University Transcripts
- TOEFL / IELTS Scoresheet (if applicable)
- Financial Support Documents

Visit our programme webpage for the full list of supporting documents required for your application.

UPCOMING INTAKE

August 2026

APPLICATION PERIOD

1 July 2025 - 31 May 2026 (International applicants)
1 July 2025 - 30 June 2026 (Local applicants)

FEE REBATES AND FUNDING

- Singaporeans and Singapore PRs: 40% tuition fee rebate
- NUS Alumni: 20% tuition fee rebate
- Tuition fees may be offset using SkillsFuture Credit

For the most up-to-date information on tuition fees, payment schedule, and available grants or funding support, please visit our programme webpage.

DEPARTMENT OF BIOCHEMISTRY

One of the longest enduring departments in the NUS Yong Loo Lin School of Medicine, the Department of Biochemistry continues the tradition of excellence and success with the School of Medicine and the University in producing engaged and contributing practitioners and researchers.

Biochemistry is the academic home of 4 NUSMed Translational Research Programme Directors, evidence of our scientific strength and leadership. Our academic faculty are field leaders with stellar achievements in bioinformatics, cancer, cardiovascular disease, digital medicine, healthy longevity, human potential, infectious disease, immunology, precision medicine, and synthetic biology. Our students are educated and mentored by some of the best and brightest in these respective fields, with the opportunity to leverage on our established faculty's academic and industrial connections.

Learn more about the Department of Biochemistry at https://medicine.nus.edu.sg/bch

NUS National University of Singapore | Department of Biochemistry
Yong Loo Lin School of Medicine

THE NUS MEDICINE ADVANTAGE

1st
QS Medicine (Asia)

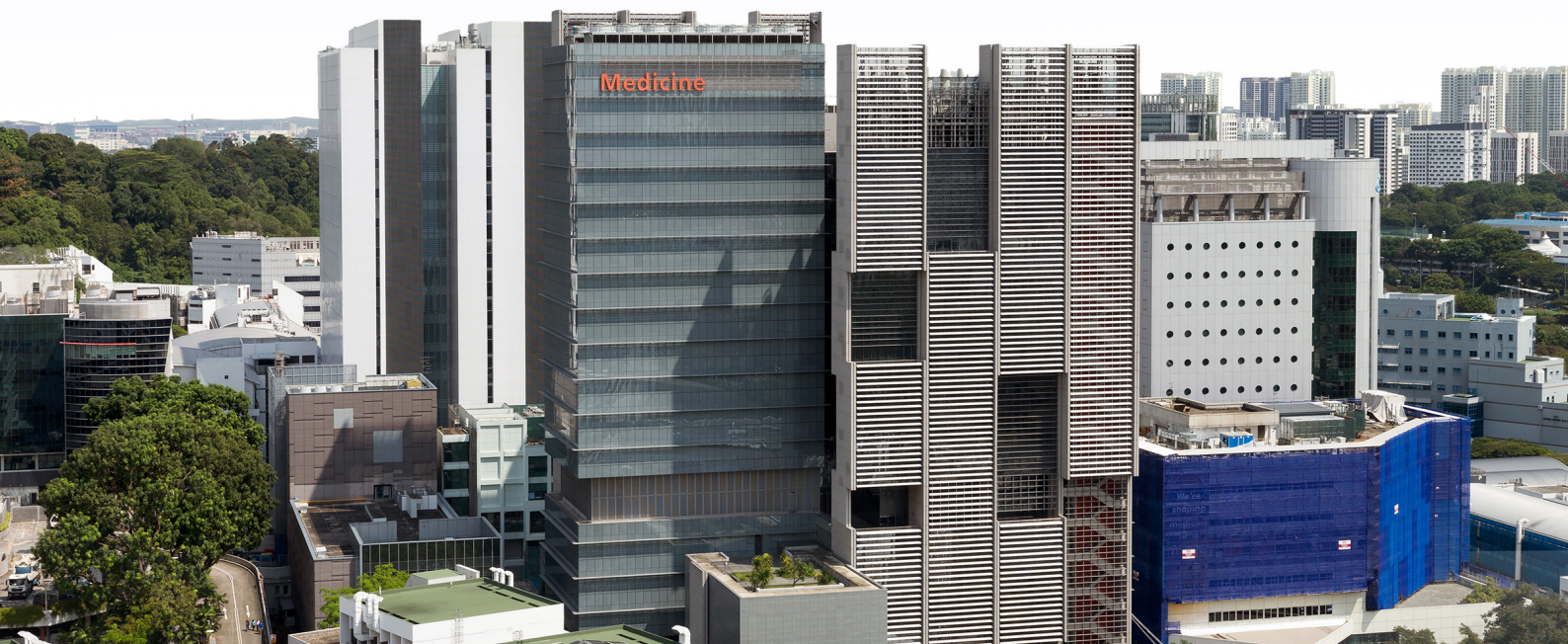
17th
THE (World)

18th
QS Medicine (World)

At the National University of Singapore (NUS), students receive a world-class education at one of the top global universities. The Yong Loo Lin School of Medicine is Asia's leading medical school, offering an exceptional opportunity to pursue advanced medical education.

Known for producing healthcare professionals who are innovators and leaders, its global reputation, paired with its focus on fostering critical thinking and innovation, makes its graduates highly sought after in both research and clinical settings. A master's degree from NUS Medicine is an investment in a future of leadership, expertise, and meaningful impact in the healthcare industry.

Statistics Source: Times Higher Education (THE) World University Rankings and Quacquarelli Symonds (QS) World University Rankings 2025



NUS National University of Singapore | Yong Loo Lin School of Medicine

SCAN QR TO START YOUR APPLICATION

Master of Science in Precision Health and Medicine (MSc PHM)

For general enquiries, please email **dgsmarketing@nus.edu.sg**
For programme-specific enquiries, please contact **mscphm@nus.edu.sg**

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