NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Physical and Mathematical Sciences
College of Science

SCHOOL OF PHYSICAL AND MATHEMATICAL SCIENCES

SCHOOL OF PHYSICAL AND MATHEMATICAL SCIENCES

At NTU's School of Physical and Mathematical Sciences, the pursuit of knowledge and the exploration of the universe's deepest mysteries come together.

We offer programmes in the Mathematical Sciences, Physics, and Applied Physics, melding holistic teaching with world-class facilities and expertise. Our Second Major and Double Major programmes provide additional opportunities to build expertise in other disciplines.

In SPMS, you can use topology to analyse big data, apply quantum mechanics to design cutting-edge materials, study how geometry determines the history of the cosmos, and much more.

Let's push back the frontiers of knowledge together.

CONTENTS

FACULTY HIGHLIGHTS

Associate Professor
Ng Keng Meng
SPMS Teaching Excellence Award

What our students say:

"Prof. Ng is very articulate and clear on conveying the message across to help us learn better. His communication style is suitable for our learning and helps us absorb the content and concept better. Personally, I like his WooClap concept".

What our students say:

"The faculty member took great focus on explaining the key concepts that were needed for assessments and highlighted important connections between different concepts and theory to solve higher level questions."

Dr Gary Greaves (Senior Lecturer)
SPMS Teaching Excellence Award

Associate Professor
Justin Song Chien Wen
SPMS Teaching Excellence Award

What our students say:

"Excellent lecturer, perhaps the best series of lecture I ever have the pleasure of attending. The level of engagement and enthusiasm makes a complex subject easier and more enjoyable to digest."

Assistant Professor Nelly Ng

Prof. Ng's research is in the area of quantum information theory, a field jointly formed and contributed by physics, mathematics, and computer science. Prof. Ng is currently a Nanyang Assistant Professor, a prestigious appointment given to outstanding early career researchers.

Prof. Ng teaches Relativity and Quantum Physics, a Year 2 core course.

Prof. Chia's research interests include ultrafast quasiparticle dynamics of strongly correlated electron systems, and penetration depth studies of unconventional superconductors.

Prof. Chia is a reviewer of Physical Review Letters and Physical Review B and is a member of American Physical Society and Optical Society of America. Prof. Chia teaches Mechanics, a Year 1 core course, and has won the SPMS Teaching Excellence Award multiple times, and the Nanyang Education Award (School) in 2011.

Associate Professor Elbert Chia

Assistant Professor Yan Zhen Zhen

Prof. Yan's research focuses on the interplay between optimization and data analytics. This includes optimization under uncertainty, data-driven pricing, network design and supply chain management, healthcare operations, and copositive/completely positive cone optimization.

Prof. Yan is also an Associate Editor for Decision Sciences, a leading economics research journal. Prof. Yan currently teaches Basic Optimization, a Year 3 course.

UNDERGRADUATE RESEARCH

The School of Physical and Mathematical Sciences is home to internationally-renowned research groups pursuing cutting-edge research in a diverse range of topics in the mathematical sciences, physics, and related disciplines. Undergraduates have many opportunities to try their hand at research through programmes such as URECA and Odyssey.

PHYSICS AND APPLIED PHYSICS

Research areas:

- Quantum computing and technology
- Topological materials and nanotechnology
- Superconductivity
- Photonics
- Biophysics
- Complex system dynamics
- Fusion energy

MATHEMATICAL SCIENCES

Research areas:

- Coding and Cryptography
- Mathematical Finance
- Geometry, Dynamics, and Learning
- Statistics and Operations Research
- Pure Mathematics

ODYSSEY RESEARCH PROGRAMME

The Odyssey Research Programme is for the student who is curious about science, thinks deeper, is one who is not daunted by failure, and who understands that questions are more important than the "right" answers.

Each year, the Odyssey Research Programme brings students together to actively participate in a paid research internship with faculty members of SPMS.

The internship takes place during the 12 weeks of the special terms 1 and 2 of the university, during which Odysseyans will immerse in full-time research in their mentor's laboratory and research group activities.

The course aims to provide students with opportunities to freely explore and take risks. Even failures are fruitful and enriching experiences!

Odyssey Club AY23 Committee members

SCAN HERE
to learn more

UNDERGRADUATE RESEARCH

INTERNATIONAL ACADEMIC COMPETITIONS

SPMS supports our student teams in national and international competitions throughout the year, with the help of numerous faculty members, laboratory and administrative staff, and postgraduate students.

PLANCKS – Physics League Across Nations for kiCK-ass Students

PLANCKS is an annual theoretical physics competition for undergraduate and master students worldwide, organized by the International Association of Physics Students (IAPS). In the traditional PLANCKS format, a team of three or four students tackle a paper consisting of 10 difficult physics questions within four hours.

International Mathematics Competition

The International Mathematics Competition (IMC) is dedicated to offering university-aged mathematics students a unique opportunity. It fosters an inclusive, safe, and supportive environment where participants can engage in challenging competitions, forge friendships with fellow mathematicians worldwide, and explore global employment prospects for those with mathematical expertise.

SCAN HERE to learn more

Shannamae Tay-Yang with her URECA poster - Big Data in Education

URECA acronym of Undergraduate Research Experience on CAmpus, is a university wide undergraduate research programme established in 2004 to cultivate a research culture and nurture research capabilities early in undergraduates' university education.

URECA

In this programme undergraduates will gain invaluable hands-on research experience under the mentorship of faculty of their choice in their chosen field of research over a period of 11 months (August to June). The foundations of research experience and practical skills gained through URECA prepares undergraduates for postgraduate research studies or career in research.

SCAN HERE
to learn more

TESTIMONIALS

OVERSEAS OPPORTUNITIES

SPMS undergraduates are given the opportunity to learn, work and do research at some of the best international partner universities and organisations in Asia, Europe and North America. The exposure overseas enables them to develop a global perspective and broaden their learning experience.

FONG WAN HANG

Programme
Physics and Applied Physics (Pure Physics)

Exchange host university and country
Aalto University, Finland

At Aalto University in Finland, I experienced a different educational system, a new culture, freezing cold winter, and made friends from around the world. Besides taking theoretical physics modules and using the research facilities at Aalto, I also acquired new skills, such as 3D modelling and printing, as well as web design during my exchange studies.

I gained a wealth of new experience during my six-month stay in Finland. For instance, I took a Finnish sauna, savoured their local delicacies, celebrated Vappu, and tried out winter sports like downhill skiing, snowboarding, and outdoor ice-skating. I'll also never forget the exhilarating moment when I saw the aurora!

JOSEPHINE SEE

Programme
Applied Physics

Exchange host university and country
Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

During my third-year summer break, I interned at the Swiss Federal Institute of Technology Lausanne (EPFL) under the guidance of Professor Christophe Galland. With guidance, I learned to build optical setups and gained hands-on experience in taking readings and conducting data analysis. Every member of the research group is very friendly, helpful, and driven. Through interacting with them, we exchanged ideas and opinions, and this has broadened my horizon. This internship has fostered openness, optimism, and critical thinking. I am grateful for financial support from NTU and recommendations from SPMS, making this opportunity possible.

COMPETITIONS & RESEARCH

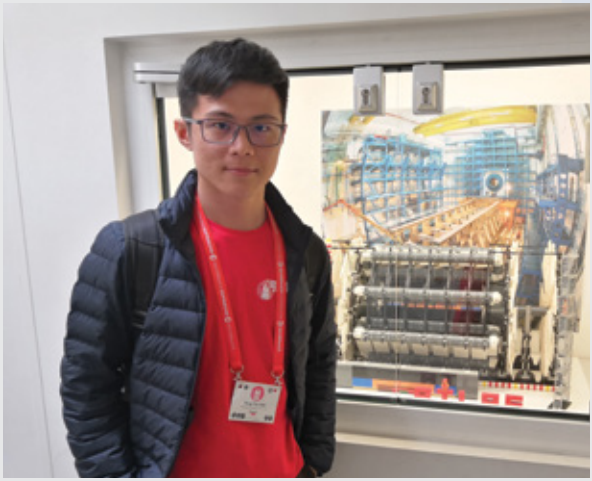
PHAN HUU AN

Programme
Mathematics and Computer Science

> I had the chance to make friends with many talented peers who share the same passion with me about mathematics and coding.

NTU provides students with many opportunities to showcase their talents in various competitions. When I decided to participate in International Mathematics Competition (IMC), SPMS supplied me with numerous educational materials and supported me administratively. Thanks to these competitions, I had the chance to make friends with many talented peers who share the same passion with me about mathematics and coding.

"...the cultural exchanges and academic experiences were instrumental in preparing me for a multinational research environment."



GAN BENG YEE
Class of 2020

Programme
Physics and Applied Physics

My physics education at NTU not only equipped me with a strong academic foundation but also fostered a spirit of curiosity and adaptability that has served me well as a PhD student at CQT – Centre for Quantum Technologies. Notably, the cultural exchanges and academic experiences, such as participating in Denmark's PLANCKS competition, were instrumental in preparing me for a multinational research environment.

INTERNSHIPS

DILIP BALAKRISHNAN
Class of 2023

Programme
Mathematical Sciences and Economics

Internship Company
Standard Club (Asia)

"I would strongly recommend for all juniors to embark on various internships..."

I was tasked with developing a business plan for the company's products. This required me to analyse data, come up with findings and a corresponding business plan which was proposed to grow the sales of the company. I would strongly recommend for all juniors to embark on various internships throughout your undergraduate years to develop yourself and pave the way for you to embark on a career path that aligns best with your aspirations.

"I gained business insight and dived deep into financial forecasting using machine learning techniques."

CHERYL ONG

Programme
Mathematical Sciences with a Second Major in Data Analytics

Internship Company
Infineon Technologies Asia Pacific Pte Ltd

As an Artificial Intelligence and Machine Learning (AI/ML) intern under Infineon's Finance department, I gained business insight and dived deep into financial forecasting using machine learning techniques. Working alongside a dedicated team, I got first-hand experience on projects which sharpened both my technical and interpersonal capabilities, alongside a deeper understanding of the pivotal role of data-driven decision-making in finance.

TESTIMONIALS

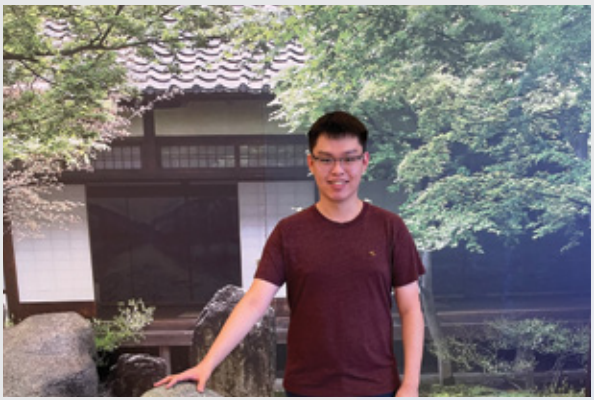
ALUMNI

TEH YU XUAN
Class of 2023

Programme
Mathematical Sciences

Current Job
PhD student at SPMS, NTU

Job scope/Research Interest
Machine Learning Techniques on Time Series Data



"The tight-knit community fostered collaboration and peer support, making the undergraduate experience more enjoyable."

My time at NTU was truly transformative. The rigorous curriculum, dedicated faculty members, and excellent facilities provided an exceptional learning environment. The tight-knit community fostered collaboration and peer support, making the undergraduate experience more enjoyable. Beyond the classroom, the vibrant student life added a perfect balance.

> The application of these physics concepts has enhanced my ability to troubleshoot issues, optimize performance, and ensure the quality of optical assemblies.

KERH SU JUN
Class of 2022

Programme
Applied Physics

Current Job
Opto-mechanical engineer

Company
Excelitas Technologies

Applied physics with a concentration in optical technology has been instrumental in shaping my career as an opto-mechanical engineer. Understanding principles such as light propagation, interference, and diffraction has enabled me to comprehend and execute precise tests for optical systems. The application of these physics concepts has enhanced my ability to troubleshoot issues, optimize performance, and ensure the quality of optical assemblies. This knowledge not only contributes to the efficiency of testing procedures but also fosters innovation in the development of cutting-edge optical technologies.

PHYSICS AND APPLIED PHYSICS

DEGREE PROGRAMMES

BACHELOR OF SCIENCE IN PHYSICS / APPLIED PHYSICS

The Physics programme covers a broad range of topics spanning most aspects of the natural world, from electromagnetism to quantum mechanics. The coursework consists of a balanced mix of theoretical, experimental, and computational components.

The Applied Physics programme builds up a solid foundation in physics, followed by advanced topics at the frontier of technology development, where the latest scientific discoveries are turned into new applications. Topics covered include spintronics, nanotechnology, laser physics, and advanced materials.

BACHELOR OF SCIENCE IN PHYSICS AND MATHEMATICAL SCIENCES

This Double Major programme provides a rigorous education in the allied fields of physics and mathematics. The programme offers special opportunities to explore the areas in which these two disciplines intersect in profound ways, such as differential geometry and general relativity, topology and condensed matter physics, and quantum field theory.

BACHELOR OF SCIENCE IN PHYSICS / APPLIED PHYSICS WITH SECOND MAJOR IN DATA ANALYTICS

This programme combines a rigorous education in physics with foundational and practical skills in data analytics.

It equips physics majors with training in data analytics, a discipline that is increasingly pervasive in science, technology, and business. The data analytics courses for the Second Major are offered by a wide range of Schools in NTU's College of Science and College of Engineering.

BACHELOR OF SCIENCE IN APPLIED PHYSICS WITH SECOND MAJOR IN ENTREPRENEURSHIP

The Applied Physics with Second Major in Entrepreneurship programme equips students with both a rigorous Applied Physics education and the knowledge needed to start and run businesses.

The programme is suitable for students who have an entrepreneurial mindset and are ready to seize business opportunities wherever they may arise. Students are provided with hands-on experiences in technopreneurship, along with relevant overseas/ local internship opportunities.

The Second Major in Entrepreneurship is open to all single-major degree programmes.

DEGREE PROGRAMMES

BACHELOR OF SCIENCE IN APPLIED PHYSICS WITH SECOND MAJOR IN MEDICAL PHYSICS

Medical Physics is an important field of Applied Physics specializing in the development of new medical techniques and medical technologies. Subtopics include therapeutic medical physics, diagnostic medical physics, nuclear medicine physics and medical health physics. As medical services become more specialized and sophisticated, medical physicists are becoming an integral part of the modern healthcare industry.

In this Second Major programme, physics majors can specialize in four subfields of medical physics: diagnostic imaging, radiation therapy, biomedical devices and medical health services. The programme is run by NTU's School of Physical and Mathematical Sciences in partnership with the Lee Kong Chian School of Medicine.

BACHELOR OF SCIENCE IN APPLIED PHYSICS WITH SECOND MAJOR IN MICROELECTRONICS ENGINEERING

The field of microelectronics is responsible for numerous technological marvels, such as the incredible processing power and storage capacity packed into our smartphones.

The BSc in Applied Physics with Second Major in Microelectronics Engineering programme is an interdisciplinary programme offered by NTU's School of Physical and Mathematical Sciences in partnership with the School of Electrical and Electronic Engineering. The curriculum begins with core physics topics such as electromagnetism and quantum mechanics and progresses into advanced topics covering the use of physics in microprocessors, integrated circuits, and other semiconductor and spintronic devices.

BACHELOR OF SCIENCE IN APPLIED PHYSICS WITH SECOND MAJOR IN QUANTUM TECHNOLOGIES

Quantum technologies are moving from fundamental research into commercialization, as exemplified by the quantum computers coming into use at IBM, Google, and other tech giants.

This Second Major programme allows students to build on their training in Physics or Applied Physics with additional courses in new and emerging quantum technologies. A novel first-year course, titled "From Quantum Mysteries to Quantum Technologies", explores the implications of quantum mechanics for numerous fields in science and the humanities. Upper-year courses will cover specialized topics such as quantum optics, quantum algorithms, quantum communication, quantum information theory, and the philosophical implications of quantum mechanics.

BACHELOR OF SCIENCE IN PHYSICS / APPLIED PHYSICS WITH SECOND MAJOR IN SUSTAINABILITY

To combat climate change and ensure a sustainable future, the Physics/Applied Physics Degree Programme with a Second Major in Sustainability cover a wide variety of topics in sustainability. Students will learn of the challenges ahead, and how to use their training in Physics or Applied Physics to develop renewable energies, novel materials and green devices.

The Second Major in Sustainability is open to all single-major degree programmes in NTU.

SCAN HERE
to find out more about the degree programmes and curriculum

CURRICULUM

YEAR

1

CORE COURSES

Mechanics, Optics, Vibrations and Waves, Electricity and Magnetism, Relativity and Quantum Physics, Physics Laboratory, Calculus, Linear Algebra, etc

+

Interdisciplinary Collaborative Core (ICC) courses*

YEAR

2

CORE COURSES

Quantum Mechanics, Electromagnetism, Thermal Physics, Analytical Mechanics, Physics Laboratory, etc

+

Interdisciplinary Collaborative Core (ICC) courses*

YEAR

3

Elective Courses (Physics)
Atomic Physics, Chaotic Dynamical Systems, Cosmology, etc

+

Elective Courses (Applied Physics)
Acoustics, Fabrication of Micro- and Nanoelectronics, Photonics, Plasmonics and Metamaterials, etc

YEAR

4

Option 1
Honours Project

+

Professional Attachment

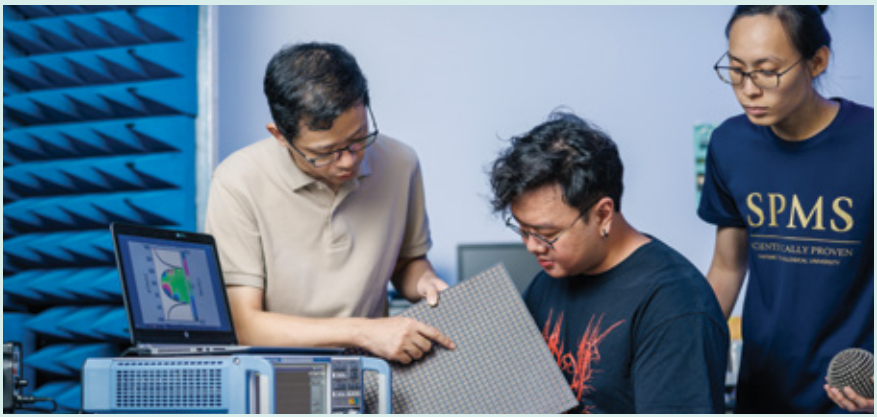
Option 2
Professional Internship

Advanced Elective Courses
Nanoscale Physics, Nuclear Physics, Quantum Electronics, etc

* **SCAN HERE** to find out more about the ICC courses

CAREER PROSPECTS

Research Officer
Data Scientist
Production Engineer
Software Developer/Engineer
Electronics Engineer
Manufacturing Engineer
Data Analyst
Business Consultant
Compliance Officer / Risk Analyst
Environmental Engineer

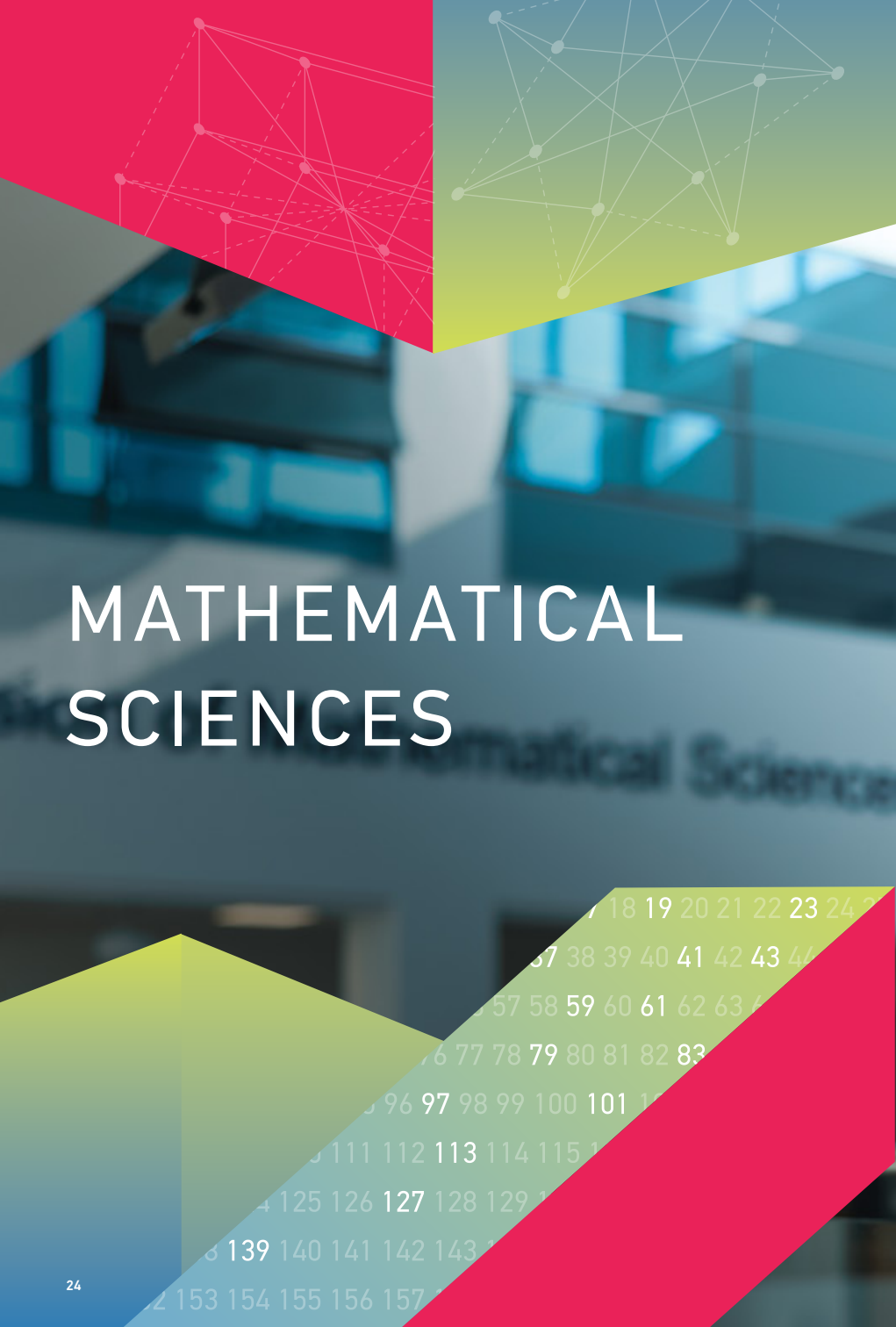


INDUSTRIES

Public Administration and Defence
Information and Communication
Electronic Products
Scientific Research and Development
Financial and Insurance

EMPLOYERS

DSO National Laboratories
GlobalFoundries Inc.
Micron Technology, Inc.
Singapore Nuclear Research and Safety Initiative
DBS Bank Limited
The National Environment Agency
Intel Corporation
ST Microelectronics



MATHEMATICAL SCIENCES

DEGREE PROGRAMMES

BACHELOR OF SCIENCE IN MATHEMATICAL SCIENCES

This programme equips students with an understanding of modern mathematics and strong analysis, reasoning, computing, and communication skills. All students in the programme receive training in the fundamental subjects of mathematics, such as calculus, statistics, and discrete mathematics. Students tailor the curriculum to their interests by choosing from a wide variety of courses that empower students with the analytical and data skills to face the challenges of the future. Students may advance their skills in key areas crucial for the industry such as computational mathematics and modelling, data analysis and statistical learning, financial technology and cybersecurity.

BACHELOR OF SCIENCE IN DATA SCIENCE AND ARTIFICIAL INTELLIGENCE

This is an undergraduate degree programme in Data Science and Artificial Intelligence, based on rigorous training in the synergistic fields of statistics and computer science.
The programme, which is run jointly by the School of Computer Science and Engineering and the School of Physical and Mathematical Sciences, targets students who have the vision of using data science and artificial intelligence (AI) to find innovative solutions to society's pressing challenges.

The curriculum provides students with opportunities to solve real-life problems in different applications domains ranging from science and technology, healthcare, business and finance, environmental sustainability, and more.

BACHELOR OF SCIENCE IN MATHEMATICAL AND COMPUTER SCIENCES

This Double Major programme is run jointly by the School of Physical and Mathematical Sciences and the School of Computer Science and Engineering and combines a strong mathematical foundation with in-depth knowledge of computer science.

Students are provided with strong foundations in the two majors (Mathematical Sciences and Computer Science), coupled with specialised training in one of four areas at the interface of Mathematical Sciences and Computer Science: Theoretical Computer Science, Cryptography and Cybersecurity, Financial Modelling, and Data Science.

BACHELOR OF SCIENCE IN MATHEMATICAL SCIENCES WITH SECOND MAJOR IN DATA ANALYTICS

This Second Major programme combines a rigorous education in mathematics with foundational and practical skills in data analytics.

This Second Major programme equips Mathematical Sciences majors with additional training in data analytics, a discipline that is increasingly pervasive in science, technology, and business. The data analytics courses for the Second Major are offered by a wide range of Schools in NTU's College of Science and College of Engineering.

DEGREE PROGRAMMES

BACHELOR OF SCIENCE IN MATHEMATICAL SCIENCES AND ECONOMICS

This is a Double Major programme covering the applications of mathematics to economics and financial modelling.

In this interdisciplinary programme, run jointly by the School of Physical and Mathematical Sciences and the School of Social Sciences, students receive rigorous training in fundamental and applied mathematics, including topics such as algorithm analysis, statistics, and time series analysis, alongside economics topics such as microeconomics, macroeconomics, and econometrics.

The programme is ideal for students planning to pursue careers in the financial services industry, or entering professional or graduate programmes in finance, economics, actuarial science, and related fields.

BACHELOR OF SCIENCE IN MATHEMATICAL SCIENCES WITH SECOND MAJOR IN ENTREPRENEURSHIP

The Mathematical Sciences with Second Major in Entrepreneurship programme equips students with rigorous training in quantitative analytical and modelling skills, combined with an understanding of how to apply those skills in industry. The programme is suitable for students who have an entrepreneurial mindset and are ready to seize business opportunities wherever they may arise. Students are provided with hands-on experiences in technopreneurship, along with relevant overseas/local internship opportunities.

BACHELOR OF SCIENCE IN MATHEMATICAL SCIENCES WITH SECOND MAJOR IN SUSTAINABILITY

The Bachelor of Science in Mathematical Sciences with a Second Major in Sustainability programme provides students with a rigorous foundation in the mathematical sciences, coupled with wide-ranging exposure to the concepts of sustainability. Students will learn how environmental challenges can be addressed by combining mathematical methods with domain-specific knowledge in the sciences, engineering, the humanities, and business.

BACHELOR OF SCIENCE IN PHYSICS AND MATHEMATICAL SCIENCES

This Double Major programme is run jointly by the Division of Mathematical Sciences and the Division of Physics and Applied Physics at NTU's School of Physical and Mathematical Sciences. Apart from providing in-depth training in physics and mathematics, the programme offers special opportunities to explore the areas in which these two disciplines intersect in profound ways, such as differential geometry and general relativity, topology and condensed matter physics, and quantum field theory.

SCAN HERE
to find out more about the degree programmes and curriculum

CURRICULUM

YEAR

1

CORE COURSES

Calculus I, Calculus II, Foundation of Mathematics, Algorithms and Computing, etc

+

Interdisciplinary Collaborative Core (ICC) courses*

YEAR

2

CORE COURSES

Calculus III, Probability and Introduction to Statistics, Real Analysis, Ordinary Differential Equations, etc

+

Interdisciplinary Collaborative Core (ICC) courses*

YEAR

3

Elective Courses

Real and Complex Analysis, Number Theory, Algebra, Differential Geometry, etc

Numerical Analysis, Optimization, Cryptography, etc

Statistics, Data Analysis, Regression Analysis, etc

YEAR

4

Option 1

Honours Project

+

Professional Attachment

Option 2

Professional Internship

Advanced Elective Courses

Deep Learning, Mathematical Statistics, etc

*** SCAN HERE**
to find out more about the ICC courses

CAREER PROSPECTS

Data Analyst

Systems Designer/Analyst

Management Executive

Software Developer/Engineer

Financial Analyst

Business Development Executive

Data Scientist

Information Technology Security Specialist

Policy and Planning Manager

Artificial Intelligence Engineer/Specialist

INDUSTRIES

Public Administration and Defence
Information and Communication
Financial and Insurance
Education
Business and Management Consultancy

EMPLOYERS

DBS Bank Limited,
Chevron Corporation
Micron Technology, Inc.
United Overseas Bank Limited
Shopee
ByteDance Ltd.
DSO National Laboratories
Centre for Strategic Infocomm Technologies (CSIT)

SCHOLARSHIPS

Nanyang Scholarship

The Nanyang Scholarship is awarded to students who have excelled academically, demonstrate strong leadership potential, and possess outstanding co-curricular records.

- Full coverage of subsidised tuition fees (after Tuition Grant).
- Living allowance of S$6,500 per academic year.
- Accommodation allowance of up to S$2,000 per academic year. (Applicable to scholarship holders who reside in NTU hostels only.)
- Travel grant of up to S$5,000 for an overseas programme subject to terms and conditions in the Travel Grant Form.
- Computer allowance of S$1,750 (one-off).
- No bond is attached to the Nanyang Scholarship apart from the three-year bond applicable to all Singapore PRs and international students under the MOE Tuition Grant Scheme.

NTU Science Scholarship

The NTU Science Scholarship is offered by the College of Science to outstanding students to pursue undergraduate programmes in one of its constituent schools, including SPMS.

- Full coverage of subsidised tuition fees (after Tuition Grant).
- No bond is attached to the Scholarship apart from the three-year bond applicable to all Singapore PRs and international students under the MOE Tuition Grant Scheme.
- Explorer Grant of up to S$3,000 for an overseas study/attachment programme subject to terms and conditions in the Explorer Grant form.
- Opportunities for research attachment/ programme.

NTU's CN Yang Scholars Programme (CNYSPS)

The CN Yang Scholars Programme Scholarship (CNYSPS) is awarded to outstanding freshmen in science and engineering fields. The CNYSP nurtures future leaders at the interface of science and engineering, with a focus on technological innovation and scientific communication.

Benefits are similar to Nanyang Scholarship

The CN Yang Scholars Programme offers:

- Guaranteed overseas final year research project (5 to 8 months) with coverage for return airfare, accommodation, meals, insurance, and visa fees.
- Guaranteed overseas exchange for one semester.
- Guaranteed overseas learning trip with subsidy.
- Guaranteed four years of stay in NTU halls of residence.
- Opportunities for research attachment from Year One onwards.
- Opportunities to attend an international conference with subsidy of up to S$2,000.
- Opportunities to meet top leading scientists and academics.
- Opportunities for PhD study at NTU or Joint PhD with partner university (Minimum CGPA of 4.00 for application of a scholarship from NTU).

Kiang Aik Kim Scholarship & SPMS Advancement Fund Scholarship

The Kiang Aik Kim Scholarship and SPMS Advancement Fund Scholarship are awarded by the School of Physical and Mathematical Sciences (SPMS) to outstanding freshmen pursuing full-time undergraduate programmes at SPMS.

- Full coverage of subsidised tuition fees (after Tuition Grant).
- Explorer grant of up to $3000 for an overseas programme (one-off).
- Opportunities for research attachment / programme.
- No bond is attached to this scholarship.

ADMISSION REQUIREMENTS
PHYSICS

Qualification Programme	Singapore-Cambridge GCE A-Level	Polytechnic Diploma awarded in Singapore	International Baccalaureate Diploma	NUS High School Diploma	Others (including international applicants)
Physics Applied Physics Applied Physics with Second Major in Data Analytics Applied Physics with Second Major in Microelectronic Engineering Physics and Mathematical Sciences (Double Major)	H2 Level passes in both Physics and Mathematics.	Any diploma, subject to passing an admission test administered by the School of Physical and Mathematical Sciences.	Passes in Physics and Mathematics at Higher Level.	Major CAP of 2.0 in both Physics and Mathematics.	A good grade in Physics and Mathematics at the senior high school level, equivalent to the Singapore-Cambridge GCE A-Level or International Baccalaureate.
Physics and Mathematical Sciences (Double Major)	Applicants to this programme must meet the minimum subject requirements for BSc (Hons) in Physics, above, and the minimum subject requirements for BSc (Hons) in Mathematical Sciences.				
Physics with Second Major in Medical Physics	H2 Level passes in both Physics and Mathematics. Applicants who did not read H2 Physics may also be admitted, subject to passing an admissions test.	Any diploma, subject to passing an admission test administered by the School of Physical and Mathematical Sciences.	Passes in Physics and Mathematics at Higher Level. Applicants who did not read H2 Physics may also be admitted, subject to passing an admissions test.	Major CAP of 2.0 in both Physics and Mathematics. Applicants who did not read H2 Physics may also be admitted, subject to passing an admissions test.	A good grade in Physics and Mathematics at the senior high school level, equivalent to the Singapore-Cambridge GCE A-Level or International Baccalaureate.

SCAN HERE
to find out more

MATHEMATICAL SCIENCES

Qualification Programme	Singapore-Cambridge GCE A-Level	Polytechnic Diploma awarded in Singapore	International Baccalaureate Diploma	NUS High School Diploma	Others (including international applicants)
Mathematical Sciences Mathematical Sciences with Minor in Finance	H2 Level pass in Mathematics	Applicants should have good grades in at least two mathematics modules, and must also pass an admission test administered by the School of Physical and Mathematical Sciences.	Pass in Mathematics at Higher Level	Major CAP of 2.0 in Mathematics	A good grade in Mathematics at the senior high school level, equivalent to the Singapore Cambridge GCE A-level or International Baccalaureate.
Mathematical Sciences & Economics (Double Major)	H2 Level pass in Mathematics and a good grade in General Paper/ Knowledge and Inquiry.		Pass in Mathematics at Higher Level and a good grade in SL English.	Major CAP of 2.0 in Mathematics and Good Overall CAP in English Language.	Good grades in Mathematics and English at the senior high school level, equivalent to the Singapore-Cambridge GCE A-Level or International Baccalaureate.
Mathematical Sciences with Second Major in Data Analytics Mathematical and Computer Sciences (Double Major)	H2 Level passes in both Mathematics and one of Physics / Chemistry / Biology/ Computing		Passes in Mathematics and one of Physics / Chemistry / Biology / Computer Science at Higher Level.	Major CAP of 2.0 in Mathematics and Major CAP of 2.0 in Physics / Chemistry / Biology.	A good grade in Mathematics and one of Physics / Chemistry / Biology / Computing at the senior high school level, equivalent to the Singapore-Cambridge GCE A-Level or International Baccalaureate.

SCAN HERE
to find out more


SPMS

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Physical and Mathematical Sciences
College of Science

School of Physical & Mathematical Sciences

Nanyang Technological University
SPMS-04-01, 21 Nanyang Link
Singapore 637371

ntu.edu.sg/spms

Connect with us

ntuspms
@ntuspms
@NTU_SPMS
@ntuspms_official

Contact us

spms_ug_adm@ntu.edu.sg
Mathematics: t.me/ntu_maths
Physics: t.me/ntu_physics