THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF SCIENCE

SCIENCE Always SHINES

Undergraduate Education

MESSAGE FROM US

Welcome to the HKUST School of Science!

At the School of Science, we promote a vigorous and dynamic learning environment as our curriculum continues to evolve and improve. Aside from the conventional science programs, we have designed several diverse, interdisciplinary and inquiry-driven programs to meet the ever-changing demands of today's society.

Outside the classroom, our students enjoy a wide range of learning opportunities such as overseas exchange programs, mentorship and internship programs, and social service activities. We also have a dedicated team that provides career advice and personalized support. Such co-curricular programs and activities broaden our students' horizons and help support their growth in all aspects of life.

Our programs emphasize flexibility and creativity and are structured to equip our students with the skills, knowledge and confidence they need to become inspirational leaders and independent thinkers. Our faculty members are dedicated to both teaching and research, cultivating in our students a strong foundation in scientific rigor and ethical principles. This empowers them to excel and thrive in both academic and commercial settings.

The School's commitment to quality and excellence remains as strong as ever. Our past successes have laid an excellent foundation for us to move forward and embrace change. By strengthening our ties with the local community and working closely with other leading institutions overseas, the School makes a global impact across a wide range of disciplines. Join us as we continue to advance the frontiers of scientific research and education!

INTRODUCTION TO THE SCHOOL OF SCIENCE

Join HKUST, one of the top Universities in Asia, where educators inspire, creative minds flourish and young leaders bloom. You will thrive in this vibrant and exciting community and fly high when you move on.

The School of Science is committed to pursuing cutting-edge research, making groundbreaking discoveries and establishing new research paradigms. Our rigorous and well-balanced education places particular emphasis on grit, curiosity and creativity. We are dedicated to equipping our students with the knowledge and confidence to be inspirational leaders capable of making a difference in society.

At the School of Science, we are proud of our exceptional academic departments, distinguished faculty, challenging yet inspiring academic programs, achievements in research and development, and state-of-the-art research facilities.

High-quality education requires dedicated educators. The School of Science has recruited outstanding faculty members, many of whom are leaders in their research fields and internationally recognized for their scientific contributions. With their different backgrounds and research interests, our faculty bring diverse, interdisciplinary perspectives to address fundamental questions in science. Together, they help raise the School's research profile to the forefront of global excellence.

World-class Research Facilities

The School of Science is associated with 19 internationally acclaimed research centers and institutes that pursue innovative and mission-driven research agendas. These include:

- Biosciences Central Research Facility
- Laboratory Animal Facility
- Materials Characterization and Preparation Facility
- Ocean Research Facility
- State Key Laboratory of Nervous System Disorders
- Hong Kong Branch of Chinese National Engineering Research Center for Tissue Restoration and Reconstruction
- Hong Kong Center for Neurodegenerative Diseases
- Biotechnology Research Institute
- William Mong Institute of Nano Science and Technology
- Brain and Intelligence Research Institute
- Atmospheric Research Center
- Center for Aging Science
- Center for Chinese Medicine R&D
- Center for Epigenomics Research
- Center for Fundamental Physics
- Center for Stem Cell Research
- Center for Theoretical Condensed Matter Physics
- Center for Tissue Regeneration and Engineering
- Daniel and Mayce Yu Molecular Neuroscience Center

39th
in Materials Science
(No. 1 in Hong Kong)

49th
in Chemistry
(No. 2 in Hong Kong)

43rd
in Mathematics
(No. 3 in Hong Kong)

64th
in Natural Sciences
(No. 2 in Hong Kong)

26th
in Statistics and Operational Research
(No. 2 in Hong Kong)

62nd
in Physics and Astronomy
(No. 1 in Hong Kong)

56th
in Environmental Sciences
(No. 3 in Hong Kong)

(QS World University Rankings by Subject 2025)

PROGRAM OVERVIEW

PROGRAM OVERVIEW

School-based Admissions

At the School of Science, the School-based programs allow students to gain a deeper understanding of various aspects of science and realize their personal interests before deciding on their majors. Our goal is to offer a diverse, interdisciplinary and inquiry-driven undergraduate education so that students have the freedom to choose majors and minors that reflect their individual interests and goals.

Our programs are designed to nurture young scientists and equip them with advanced scientific knowledge, empowering them to contribute meaningfully to the betterment of humankind. Our students are equipped with the necessary knowledge and skills to engage in activities demanding critical thinking, analysis and task execution to excel in their future professions, including research and development, education, manufacturing, logistics, and business and finance.

In recent years, the School has dedicated its efforts and resources to designing a range of laboratory and signature courses that cultivate students' proficiency in experimental methods and logical analysis - two indispensable pillars of the scientific method.

In addition to rigorous academic training, we place equal emphasis on our students' personal development. To that end, a wide range of co-curricular activities and training are provided to enrich their university experience further. These include, but are not limited to, overseas exchange, undergraduate research, internships, community services and engagement programs, which have been designed specifically for the School of Science students.

The School of Science offers two general School-based program choices – the **Science (Group A)** program and the **Science (Group B)** program. The Science (Group A) program is tailor-made for students interested in the physical sciences, whereas the Science (Group B) Program is more suitable for those who are interested in the natural sciences. Students declare their corresponding majors upon completing their first year of studies.

Majors and Minors

Major Programs

The School of Science offers the following major programs:

- BSc in Biochemistry and Cell Biology (BCB)
- BSc in Biomedical and Health Sciences (BMH)
- BSc in Biotechnology (BIOT)
- BSc in Biotechnology and Business (BIBU)[1]
- BSc in Chemistry (CHEM)
- BSc in Data Analytics and Artificial Intelligence in Science (DASC)
- BSc in Data Science and Technology (DSCT)[2]
- BSc in Mathematics (MATH)
- BSc in Mathematics and Economics (MAEC)[1]
- BSc in Ocean Science and Technology (OST)
- BSc in Physics (PHYS)
- BSc in Risk Management and Business Intelligence (RMBI)[3]

Remarks:

1. Jointly offered by the School of Science and School of Business and Management
2. Jointly offered by the School of Science and School of Engineering
3. Jointly offered by the School of Science, School of Engineering, and School of Business and Management

Minor Programs

Students can also broaden their learning experiences by enrolling in various minor programs offered both within and beyond the School of Science.

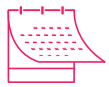
Program Structure

In their first year of study, students take Science Foundation courses as well as various language, elective and/or general education courses. On completion of their first year, students declare their majors offered by the School of Science, as well as Joint School Programs and the programs offered by the Academy of Interdisciplinary Studies.

Most science major programs offer different study tracks and options, while providing an opportunity for double majors and minors. This flexibility caters to students with diverse academic and career aspirations.

In Year 1, students will enroll in science foundation courses according to their interests and background, as well as courses in other areas to fulfill the University Common Core requirements.

Year 1



Normative period of study:
4 Years

Year 2 **Year 3** **Year 4**

Students will declare a major program in their second year. They may also consider declaring a minor program to add a secondary area of focus to their studies.

Minimum credit requirement for graduation:
120 Credits

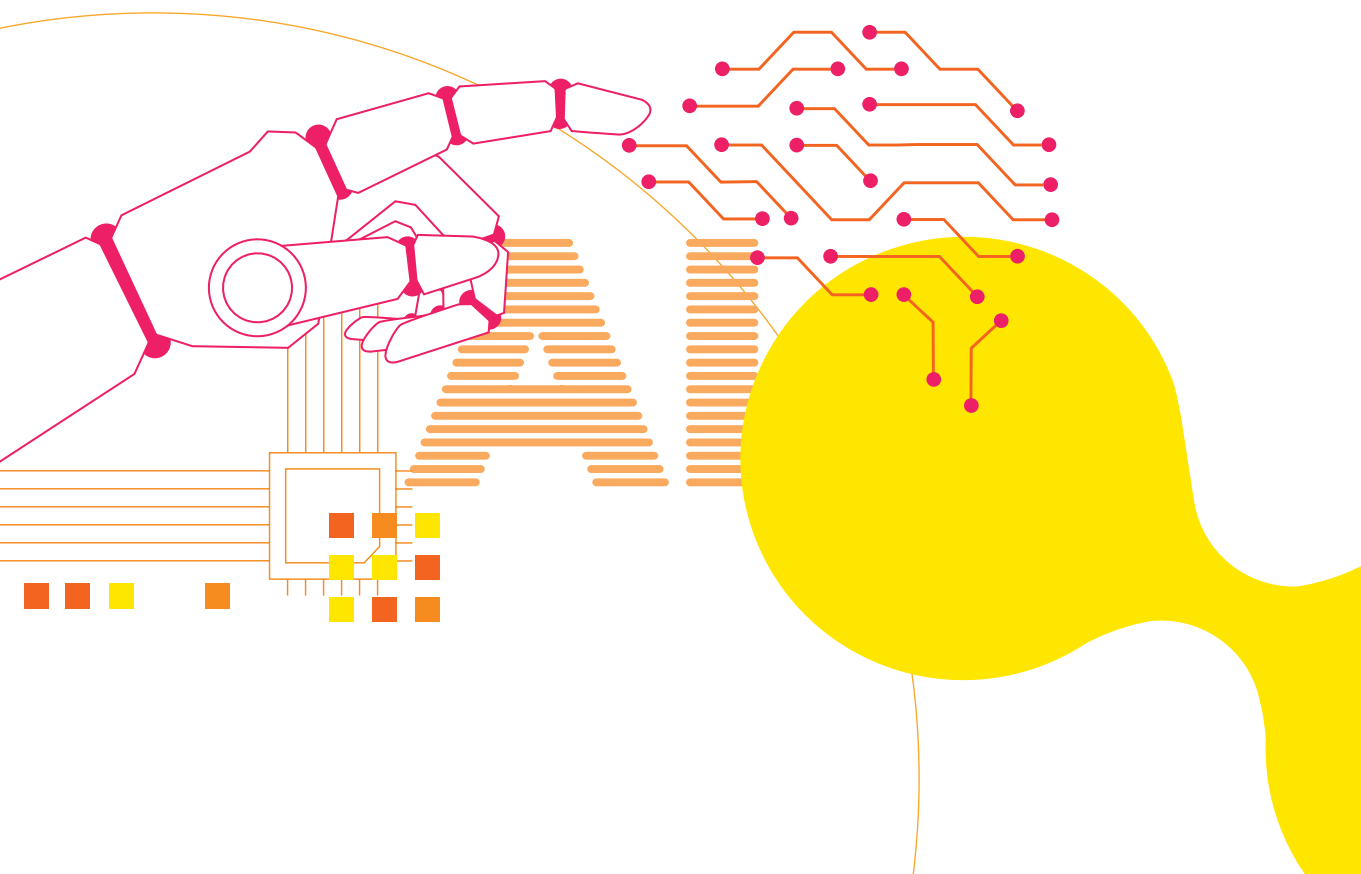
Science (Group A) with Extended Major in Artificial Intelligence

Science (Group A) with Extended Major in Artificial Intelligence (SSCI-A (AI)) is designed for science students seeking both in-depth knowledge across science fields and a strong understanding of innovative applications of AI within their major areas.

The world is changing fast, and AI has come to define society today in ways we never anticipated. Knowledge about AI is a perfect complement to science subjects by integrating mathematical rigor and essential tools to achieve synergy.

The pioneering SSCI-A (AI) program is designed to prepare our students for new opportunities and challenges. The curriculum is cross-disciplinary and practical, and students have the opportunity to gain a strong foundation in one of the three relevant major science subjects as well as understand the innovative applications of AI in their major areas. In addition, students gain cross-disciplinary problem-solving skills and professional insights through a Design Thinking course and Professional Seminars in AI. Moreover, supported by industry sponsorship, the Capstone Project+ enables students to gain hands-on experience applying AI to real-world problems.

Students are expected to take approximately one additional course per semester throughout the four years. Upon satisfactory completion, students are awarded a “BSc in (Mathematics / Physics / Ocean Science and Technology) with Extended Major in Artificial Intelligence”.



International Research Enrichment (IRE)

The International Research Enrichment (IRE) program is designed for those students who are interested in either pursuing a research career in science or broadening their exposure to research during their undergraduate studies. It emphasizes curiosity and grit, which are essential attributes that define a successful career in scientific research.

The curriculum structure of the IRE program is similar to that of the Science (Group A) and Science (Group B) programs. However, the IRE program distinguishes itself from these regular science programs by providing students with the following:

- **Free choice of major programs among Biochemistry and Cell Biology, Biotechnology, Chemistry, Mathematics, Ocean Science and Technology, and Physics**
- Participation in advanced research projects under the supervision of world-class professors
- Opportunities to meet Nobel Laureates and renowned scientists
- Individualized research guidance and mentoring from experienced faculty members
- Participation in the Undergraduate Research Opportunities Program (UROP) to gain hands-on research experience
- Exchange and internship opportunities in renowned foreign universities/ research institutes
  - Summer research internship opportunities in foreign universities and institutions
  - Scholarship support for overseas learning trips

Student Sharing

I got my first taste of research from a UROP in Year 2. Also, an exchange study in Korea and IRE research internship in Japan provided me with experience of research life in different cultures. The Capstone Project further sharpened my experimental skills. These experiences built a strong foundation for my subsequent MPhil and PhD research.

LIFE SCIENCE

BIOCHEMISTRY AND CELL BIOLOGY (BCB)

Program Overview

Students explore how living organisms are structured through the complex interplay of biological pathways. Emphasis is placed on the knowledge gained from research conducted both in cell-free experimental systems (Biochemistry) and within cells (Cell Biology). The early curriculum is broad-based and teaches students the fundamental concepts and principles of Biochemistry and Cell Biology. This enables them to explore and develop their own interests in various aspects of modern molecular life sciences. As they progress through the program, they enroll in increasingly advanced and specialized elective courses tailored to their interests and career goals. BCB students also have the opportunity to engage in intensive practical training and participate in cutting-edge research projects.

Student Sharing

The BCB program gave me all-around laboratory training that equipped me for a career in the medical laboratory industry. With high flexibility in course enrollment, students can undertake any courses that lead to their future goals. I also found that the HKUST staff and faculty members were very helpful when offering career planning support.

BIOTECHNOLOGY (BIOT)

Program Overview

The Biotechnology (BIOT) program is designed to encompass the research and development of biotechnology products and services, including medicines, cosmetics, health supplements and genetic diagnostics. The program provides students with theoretical and practical knowledge of the latest biotechnological developments, with a particular focus on the applied aspects of life science. The curriculum also provides a foundational understanding of key concepts across diverse areas of the life sciences, including biochemistry, cell biology, molecular biology, microbiology and genetics. BIOT students can select one of two distinct study tracks, each offering their unique strengths and specialized focus areas:

- **Applied Bioscience Track**

  This track is designed to enrich students' academic experience through a variety of experiential learning and project-based learning opportunities. Students address real-world problems in biotechnology by formulating experimental strategies, developing innovative solutions, and translating practical knowledge into societal impact.

- **Entrepreneurship Track**

  This track is designed to enrich students' vision and knowledge of entrepreneurship through a range of co-curricular activities. Students are equipped to develop integrated commercial solutions for both academic and real-world problems in biotechnology. They are also encouraged to participate in internal and external entrepreneurial competitions, transforming their ideas into viable commercial practice.

Student Sharing

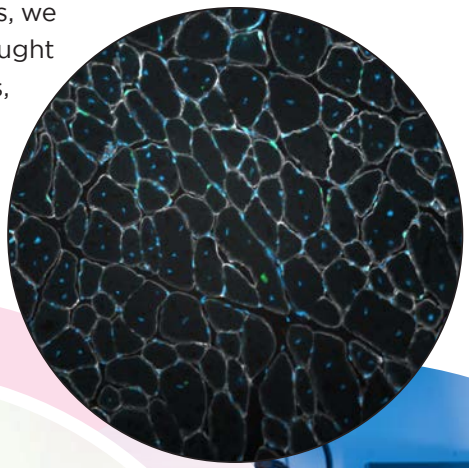
As a biotechnology student who is passionate about research, I was thrilled with the opportunities that HKUST provided for me to gain hands-on research experience in top-notch facilities and laboratories! Without such opportunities, I would not have found my research interest and reached the point where I could pursue a PhD in the United States.

BIOMEDICAL AND HEALTH SCIENCES (BMH)

Program Overview

In this program, students study the scientific principles of different aspects of the biomedical and health sciences. They are exposed to a variety of advanced diagnostic and disease modeling technologies, including the use of omics technologies, computational analytical pipelines and the generation of experimental models for accelerated drug or treatment discoveries in a pre-clinical setting. The early curriculum is broad-based, covering both theoretical and practical aspects of biomedical science. The integration of foundational knowledge is achieved through inquiry-based experiential learning courses that emphasize teamwork as well as individualized research and capstone projects in the final year.

BMH graduates are primed for postgraduate training in clinical medicine, genetic counselling, and biomedical research. Through their immersive education on biomedical and health technologies, we also expect our graduates to be sought after by pharmaceutical companies, research institutes, government agencies and healthcare consulting firms.



DATA ANALYTICS AND ARTIFICIAL INTELLIGENCE IN SCIENCE (DASC)

Program Overview

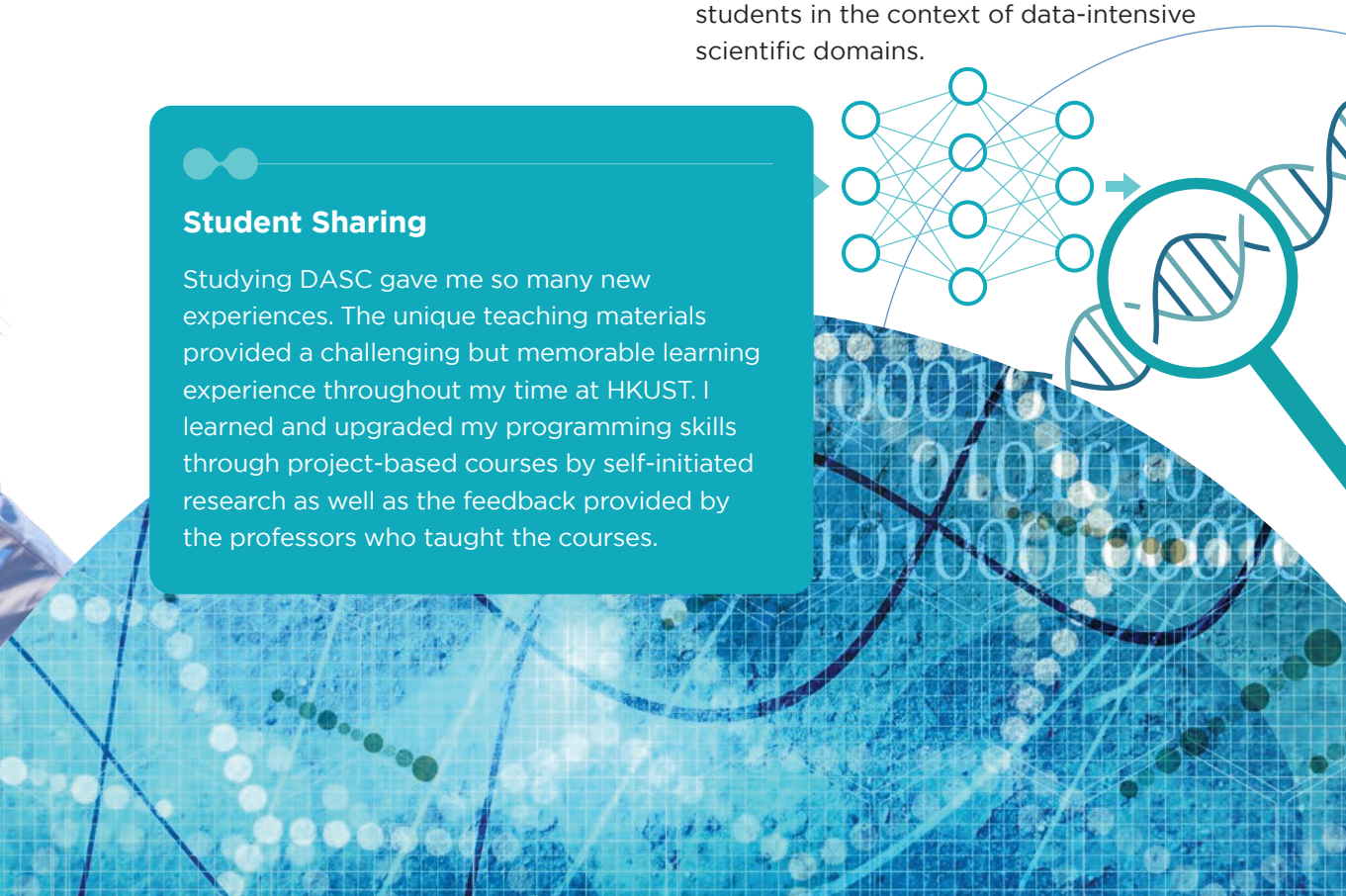
In today's era of big data, a vast amount of information is continuously generated and collected across nearly every domain of science, technology and the social sciences. Data Analytics and Artificial Intelligence in Science is a major program designed for science students seeking to acquire and apply data analysis skills across a range of scientific disciplines.

Program Curriculum

The curriculum starts with basic training in programming and computational methods, as well as analytic methods and statistics, data visualization, machine learning and artificial intelligence. At the start of Year 3, students then select one of the following study tracks to refine and apply their skills.

- Applied Biosciences Track
- Environmental Science Track
- Information Science Track
- Molecular Science and Cheminformatics Track

The courses within each track are not designed to produce experts in the respective fields, but to immerse students in the context of data-intensive scientific domains.



Student Sharing

Studying DASC gave me so many new experiences. The unique teaching materials provided a challenging but memorable learning experience throughout my time at HKUST. I learned and upgraded my programming skills through project-based courses by self-initiated research as well as the feedback provided by the professors who taught the courses.

MATHEMATICS (MATH)

Program Overview

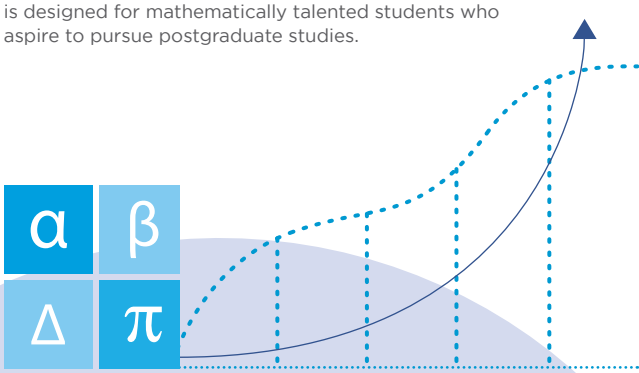
Mathematics permeates almost every discipline of science and technology. It is not only a tool for understanding the abstract models of real-world phenomena while solving practical problems, but it is also the language of commerce, engineering and other sciences such as biology, physics and computing.

Program Highlights

The BSc in Mathematics program is unique among all universities in the territory. It offers seven tracks:

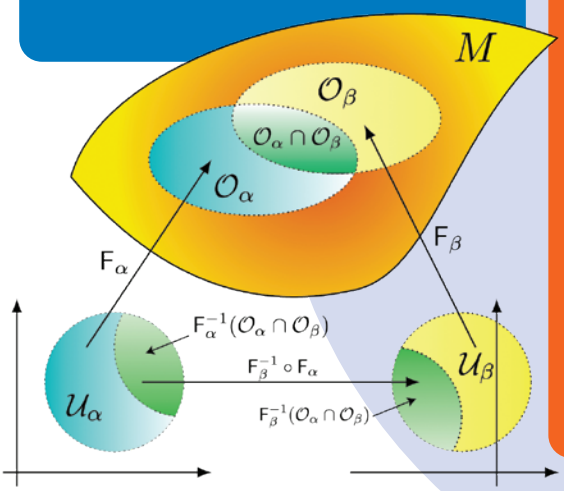
- Applied Mathematics Track
- Computer Science Track
- Financial and Actuarial Mathematics Track
- General Mathematics Track
- Pure Mathematics Track
- Pure Mathematics (Advanced) Track*
- Statistics Track

* The Pure Mathematics (Advanced) Track is an advanced version of the Pure Mathematics Track and is designed for mathematically talented students who aspire to pursue postgraduate studies.



Student Sharing

I joined research projects supervised by computer science and math professors and worked alongside postgraduate students. As a sweet bonus, I got internship opportunities in Indonesia and Hong Kong. Overall, the math program and the university gave me the tools required for my early career, and now I only need to utilize them!

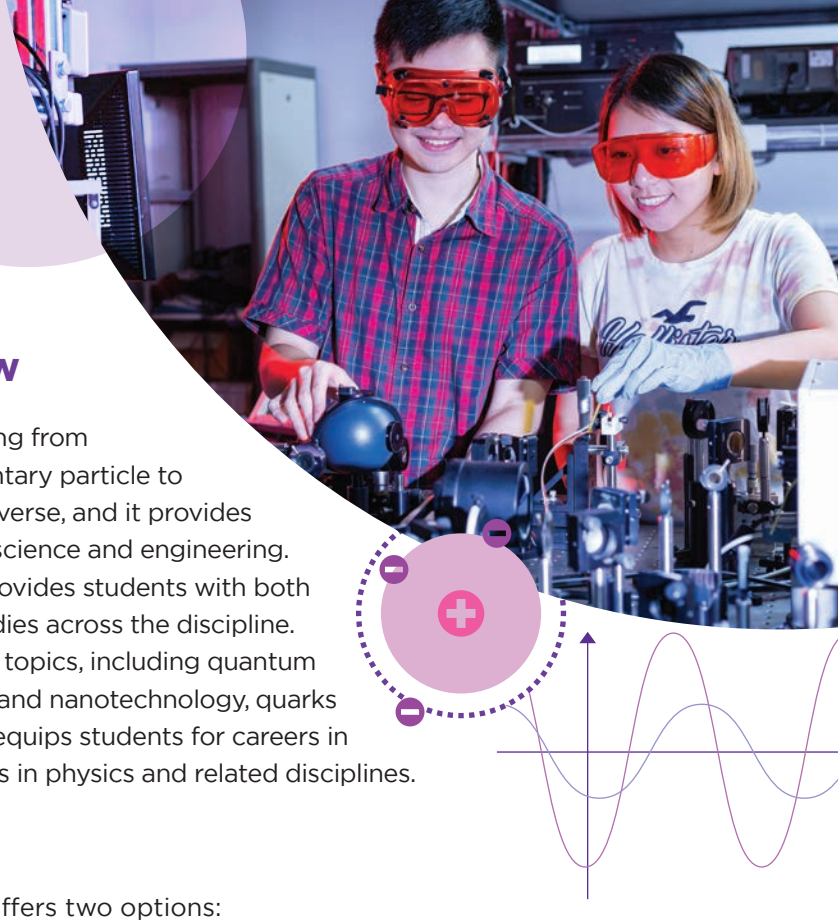


Extended Major Options

Students can opt for the Extended Major in Artificial Intelligence (AI) or Digital Media and Creative Arts (DMCA). The Extended Major is not a standalone major, but accompanies certain majors as an expanded choice, enabling students to keep abreast of emerging technologies and innovations that are shaping our society in a multi-faceted way.

In addition to attaining expertise in mathematics, physics or ocean science and technology, students with the Extended Major acquire multidimensional visions and knowledge of the emerging technologies in AI or DMCA. They can then apply the innovative technological skills they gain to solve real-world problems in

PHYSICS (PHYS)



Program Overview

Physics encompasses everything from investigating the tiniest elementary particle to determining the fate of the universe, and it provides the foundation for all modern science and engineering. The BSc in Physics program provides students with both depth and breadth in their studies across the discipline. They learn a variety of exciting topics, including quantum computing, superconductivity and nanotechnology, quarks and black holes. The program equips students for careers in science or for advanced studies in physics and related disciplines.

Program Highlights

The BSc in Physics program offers two options:

- **Honors Physics Option** - This option is intended for students who plan to enter graduate school after their undergraduate studies at HKUST. The curriculum provides a strong foundation of coursework and culminates in a final year research project and thesis.
- **Physics and Mathematics Option** - This option is intended for students who have a keen interest in both physics and mathematics. It is particularly useful for those who plan to pursue their future studies in theoretical physics.

their area of expertise. Upon fulfilment of the curriculum requirement, students are awarded one of the following degrees:

- BSc in Mathematics (with Extended Major in Artificial Intelligence)
- BSc in Mathematics (with Extended Major in Digital Media and Creative Arts)
- BSc in Physics (with Extended Major in Artificial Intelligence)
- BSc in Ocean Science and Technology (with Extended Major in Artificial Intelligence)
- BSc in Ocean Science and Technology (with Extended Major in Digital Media and Creative Arts)

Student Sharing

HKUST provided me with various research opportunities, which allowed me to explore different fields, including optical microscopy, nonlinear dynamics analysis and astronomical instrumentation. I also got the rare privilege to work with a Physics Nobel Prize Laureate for an astronomical instrumentation project. All these experiences prepared me for a career in science.

OCEAN SCIENCE AND TECHNOLOGY (OST)

Program Overview

The BSc in Ocean Science and Technology (OST) is an integrative program that provides students with a comprehensive foundation across multiple disciplines within ocean science and technology. It also introduces students to cutting-edge scientific and technological advancements in the exploration, conservation and management of ocean resources.

Program Highlights

This program offers a variety of courses on different aspects of ocean science, including:

- **Foundation:** Biological, chemical and physical processes in the ocean, and ecosystem functions
- **Technology:** Marine instrumentation, data management and pollution tracking
- **Applications:** Pollution bioremediation, environmental impact and risk assessment
- **Socio-economy:** Conservation and management of marine resources, fisheries and aquaculture

A major emphasis of the curriculum is the provision of practical experience, experiential learning and field trips to enhance students' academic, career and personal development.

Extended Major Options

OST students also have two Extended Major options: AI and DMCA. OST students with the Extended Major in AI (OST-AI) gain up-to-date expertise in this emerging field and learn to apply their knowledge to real-world challenges, such as forecasting harmful algal blooms and modeling climate change. The Extended Major in DMCA is for students who are interested in a career path focused on creating multimedia content to promote and educate the public about environmental conservation and protection. On completion of the curriculum requirements, students are awarded one of the following degrees:

- BSc in Ocean Science and Technology (with Extended Major in Artificial Intelligence)
- BSc in Ocean Science and Technology (with Extended Major in Digital Media and Creative Arts)

Student Sharing

Thanks to support from HKUST, I got the chance to work as an intern at the Wetland Park where I escorted eco tours and learned about managing wetlands. Other learning activities, including field trips, lab work and faculty guidance, broadened my horizons and helped me prepare for a career in environmental consultancy.

CHEMISTRY (CHEM)

Program Overview

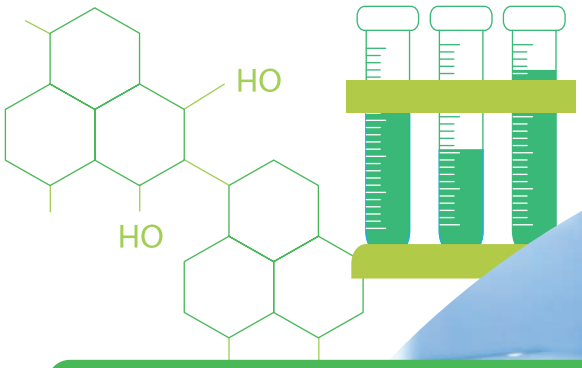
Students in the BSc in Chemistry program study all major branches of chemistry and related disciplines. The main areas covered include analytical chemistry, inorganic chemistry, organic chemistry and physical chemistry. Specialized areas of study include environmental chemistry, medicinal chemistry, biological chemistry, polymer chemistry, materials chemistry (including nanostructures), instrumentation, forensic science, food safety and computational/theoretical chemistry.

This program provides excellent training in both analytical thinking and problem-solving skills. The curriculum, which includes basic training in analytical, inorganic, organic and physical chemistry, as well as modern laboratory techniques and skills, is specifically designed to provide students with maximum flexibility in shaping the depth and scope of their specialization.

The program offers students four distinct pathways for specialization:

- Biomolecular Chemistry Option
- Environmental and Analytical Chemistry Option
- Materials Chemistry Option
- Pure Chemistry Option

Co-curricular activities and experimental learning experiences, such as internships and undergraduate research opportunities, are provided to enhance students' career development.



Student Sharing

Studying chemistry at HKUST was an enlightening and rewarding experience! Doing research with professors at HKUST and Hong Kong Science and Technology Park (HKSTP) played a crucial role in my academic self-exploration and deepened my enthusiasm for chemistry research.

JOINT SCHOOL PROGRAMS

BIOTECHNOLOGY AND BUSINESS (BIBU)

Program Overview

The Biotechnology and Business Program (BIBU) is jointly offered by the School of Science and the School of Business and Management, and it is aimed at students who have a hybrid interest in biotechnology applications and business operations. This program provides students with a comprehensive educational experience, integrating core knowledge in life sciences and biotechnology, with essential business competencies, including accounting, finance, economics, marketing and operations management. It also cultivates students' creative and critical thinking skills while fostering a global perspective on biotechnology development and applications – equipping them with a solid foundation to innovate, manage and market biotechnology ventures.

Student Sharing

BIBU offers a unique blend of scientific expertise and entrepreneurial acumen by building a bridge between the two ever-growing industries. This multidisciplinary education, which provides the ultimate flexibility in career options, helped me to be a more versatile professional with new and limitless opportunities.

MATHEMATICS AND ECONOMICS (MAEC)

Program Overview

The Mathematics and Economics (MAEC) program is jointly offered by the School of Science and the School of Business and Management and provides students with solid training in the fundamental theories of both mathematics and economics. This curriculum develops students' quantitative reasoning, deepens their conceptual understanding, and strengthens their ability to communicate effectively in mathematics and the language of economics and social sciences. This interdisciplinary degree is suitable for students who seek a career in the finance industry that emphasizes quantitative skills, or who intend to pursue postgraduate studies in applied mathematics, economics or business, or in related areas such as operations research or management science.

Student Sharing

I really felt the support from both Schools, which provided me with ample resources for my personal and career development. It was an incredible experience to study Mathematics and Economics at this world-class university.

DATA SCIENCE AND TECHNOLOGY (DSCT)

Program Overview

The Data Science and Technology (DSCT) program is jointly offered by the School of Science and the School of Engineering. A wide range of business and industry sectors are experiencing a growing demand for data specialists to perform in-depth analyses of the valuable datasets generated throughout business operations. DSCT graduates are exceptionally well-positioned to seize emerging opportunities in today's data driven job market. This program equips students with a robust set of mathematical tools, data analytical techniques and IT technologies to interpret and drive insights from data acquired from diverse sources.

DSCT students apply a wide array of mathematical and IT tools to build basic expertise in data analysis and programming, enabling them to interpret and investigate real-world phenomena embedded in large-scale datasets from diverse information sources. Additionally, students gain hands-on experience and benefit from expert guidance to develop their practical data analysis skills - providing a strong foundation for their future career. The program covers a broad spectrum of expertise, including machine learning, classification, clustering, data mining, database management, cloud computing and data visualization.

Student Sharing

Studying Data Science at HKUST was an exhilarating journey. The cutting-edge curriculum and hands-on projects equipped me with valuable analytical and programming skills. I am excited to apply my knowledge to solve real-world challenges in the data-driven era.

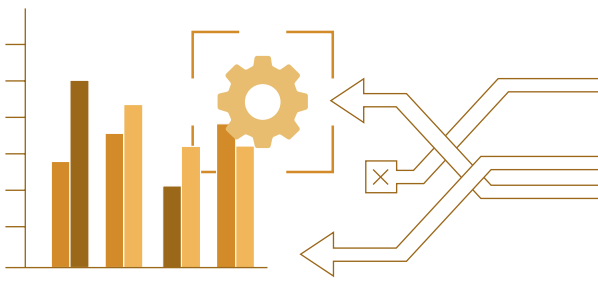
RISK MANAGEMENT AND BUSINESS INTELLIGENCE (RMBI)

Program Overview

Risk management and business intelligence form a vital part of a company's strategic planning and decision-making. The BSc in Risk Management and Business Intelligence (RMBI) program integrates training in both risk management and business intelligence to address market demands in one single undergraduate program.

Combining the strengths of HKUST's School of Business and Management, School of Engineering, and School of Science, the cutting-edge BSc in RMBI program features a curriculum with a strong emphasis on quantitative techniques and business knowledge. RMBI graduates are equipped with:

- Risk awareness across financial institutions and other organizations, including market, credit, operational and business risks
- Proficiency in mathematical modeling and quantitative methods for assessing and minimizing various types of risk
- Expertise in data and text mining techniques as well as in advanced technologies to analyze and manage the increasingly large volumes of business data essential for informed decision-making



FinTech Option

An academic option "Financial Technology" is also offered to students who wish to develop a deeper understanding of financial technology, its engineering foundations, emerging cryptoventures and the latest advancements in the field.

RESEARCH EXCELLENCE

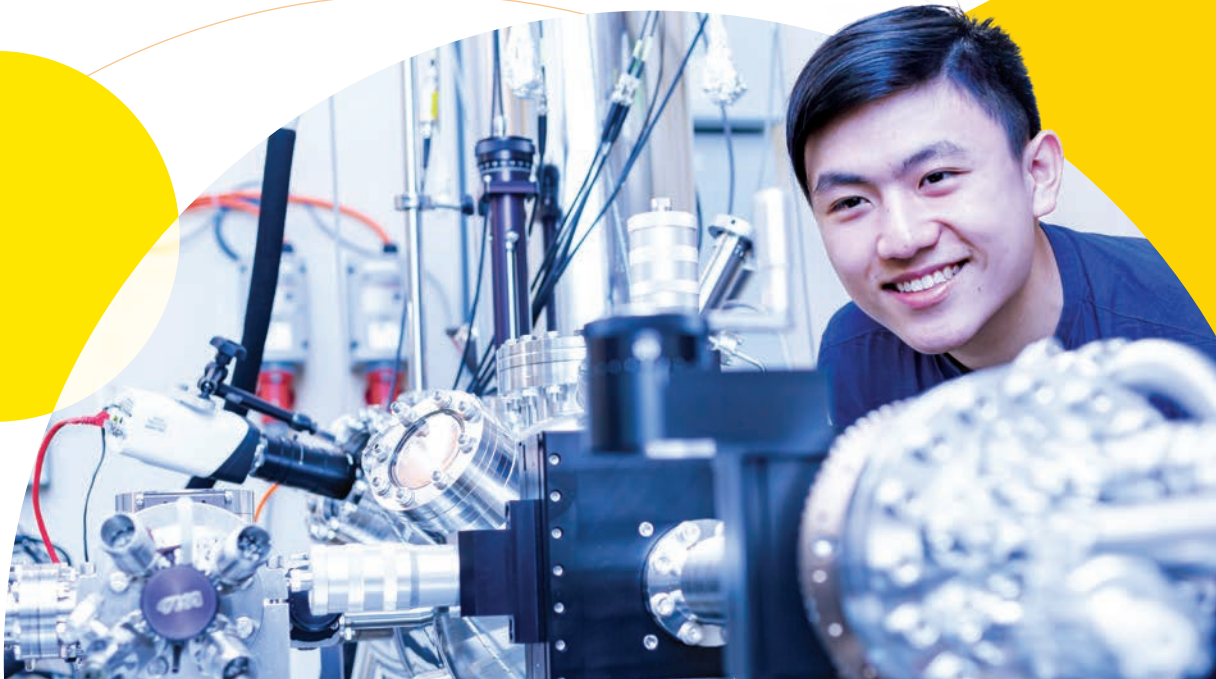
Department of Physics

Research Foci

- Cold atoms, optics, and quantum information
- Condensed matter experiments and advanced materials
- Condensed matter theory, statistical and computational physics
- Particle physics and cosmology
- Soft matter and biological physics
- Metamaterials, photonic and photonic crystals

Facilities

Research in the Department covers a broad range of topics, from the smallest to the largest scale. Faculty members work both independently and collaboratively and they are also linked to HKUST's front-running William Mong Institute of Nano Science and Technology and the HKUST Institute for Advanced Study.



Department of Mathematics

Research Foci

- Algebra and number theory
- Geometry and topology
- Analysis and differential equations
- Applied and computational mathematics
- Financial mathematics
- Probability and statistics
- Data science

Facilities

The Department utilizes a range of up-to-date facilities and equipment for teaching and research purposes. In addition to a laboratory equipped with high-end desktop PCs, students have access to a High-Performance Computing laboratory featuring 200 powerful CPU- and GPU-based servers, which deliver 250 TFLOPS of processing power and 1.5 petabytes of storage capacity. Moreover, the NVIDIA DGX SuperPOD AI supercomputer (based on the Hong Kong campus) and the Tianhe2 supercomputer (based at the Guangzhou Fok Ying Tung Research Institute) are also available. Leveraging these advanced computing resources, our faculty and students tackle complex, computationally intensive problems in their cutting-edge research projects – empowering them to remain leaders in their respective fields.

Department of Chemistry

Research Foci

- Analytical and environmental chemistry
- Synthetic chemistry
- Materials chemistry
- Physical and computational chemistry
- Chemical biology and medicinal chemistry

The Department has forged strong international partnerships with leading chemical industries and has been instrumental in establishing university-wide collaborations that connect universities, research institutions and companies across Hong Kong, Mainland China, Japan, Europe and the US.

Facilities

The Department is equipped with modern laboratories and state-of-the-art instrumentation. Complementing these resources are central University facilities such as the Materials Characterization and Preparation Facility, the Nanoelectronics Fabrication Facility and the Environmental Central Facility - all offering a comprehensive array of advanced analytical tools.

Students also have access to advanced computing infrastructure for molecular graphics or modeling, as well as quantum mechanics and molecular dynamics computations.

Division of Life Science

Research Foci

- Neuroscience and nerve system disorders
- Cancer biology
- Cell biology and signaling
- Stem cell and developmental biology
- Macromolecular structure and function
- Biotechnology and medicinal biochemistry
- Genomics and epigenomics

Faculty members in these research areas form integrated teams that foster collaboration and innovation. The synergy among laboratories drives the multi-disciplinary exploration of complex biological questions while also cultivating a dynamic environment where students engage directly with the challenges of modern research.

Facilities

The Division is excellently equipped for research in a broad range of areas. The Laboratory Animal Facility provides a centralized and modern facility for animal studies. Additional state-of-the-art facilities for biochemical and cellular studies are provided by the Biosciences Central Research Facility.

Department of Ocean Science

Research Foci

- Marine ecology
- Oceanography
- Ocean technology

The Department places strong emphasis on cross-disciplinary research and education in Ocean Science and Technology. Key study sites include the estuarine ecosystem of the Pearl River, the coastal bays surrounding Hong Kong, and various deep-sea environments including those of the South China Sea.

Facilities

The Ocean Research Facility on campus is a key infrastructure supporting our marine research, while the Environmental Central Facility offers a broad range of equipment and technologies essential for water and atmospheric environmental studies.

STUDENT LIFE

STUDENT LIFE

Academic Advising

The School of Science Office of Academic Advising and Support, or SCI/HOME, provides students with a comprehensive orientation to university life, initial advice on course selection and personalized consultation for choosing a major. It also offers ongoing academic support and advice on a range of academic-related matters. Thus, SCI/HOME:

- Provides accurate and relevant information about academic programs and other educational experiences.
- Offers one-on-one consultations to help students choose a major and explore possible double major or major-minor combinations that align with their interests, abilities and career goals.
- Explains the university regulations, graduation requirements, and institutional policies and procedures.
- Promotes educational resources such as internships, mentorship opportunities, undergraduate research and exchange programs.
- Encourages students to use institutional and community-based services that support their academic success.

MAGNET (Make A Great Net)

MAGNET is a peer mentoring program in the School of Science that aims to help new students make a smooth transition to university life by providing a supportive environment. This program allows students with diverse backgrounds to bond over similar experiences and interests. Peer mentors are selected senior-year students from different science disciplines who are interested in helping new students navigate and overcome the challenges they may face during their first year. The mentor / mentee connection provides an academic, cultural, and social support network for students seeking academic excellence and satisfaction.

First Year Course – HMAW 1905 - Behavioral Foundations of University Education: Habits, Mindsets, and Wellness

HMAW 1905 is a one-year course, led by faculty advisors, advising staff and peer mentors, designed to help new students transition smoothly into university life through personalized advising, peer sharing and guided discussions. It also integrates the science of well-being to support students' personal growth and interpersonal development. This course also seeks to cultivate students' self-awareness and confidence, empowering them to fully embrace their university experience and pursue fulfilling careers thereafter.

Student Development Programs – Science for Success

University Student Sponsorship Program in Wildlife Conservation (USSP)

In collaboration with the Ocean Park Conservation Foundation Hong Kong, selected students receive sponsorship to travel overseas, where they gain hands-on research experience while actively contributing to wildlife conservation efforts.

Alumni Mentoring Program

Students who join the Alumni Mentoring Program are offered opportunities to connect with alumni mentors across various industries to acquire career-related skills and broaden their professional networks.

Overseas Cultural Exploration and Service Trips

As part of efforts to promote civic responsibility, students might have an opportunity to participate in service-learning trips to Cambodia and Sri Lanka, where they can engage in various projects that facilitate cultural exchanges with local communities as well as explore historically significant heritage sites.

Cultural Study Tours to Mainland China

The School of Science has established close relationships with renowned institutions in Mainland China to organize a variety of study tours. These experiences encourage students to step out of their comfort zone and immerse themselves in Chinese culture.

SCI Busking Team

SCI busking team is a student-driven science busking team that was established to mobilize and unite Science students, alumni and staff in promoting popular science and serving the community together.

Internships, Research Opportunities and Student Exchanges

Career Training and Internship Opportunities

Students are provided with an array of career training activities, including one-on-one career consultations to explore their career goals, mock interviews with HR professionals across various industries, and company visits for direct exposure. The School also offers personalized services, such as referrals to partner organizations for students seeking internship opportunities and graduate employment.

Undergraduate Research Opportunities Program (UROP)

The undergraduate research opportunities program (UROP) is an HKUST signature program designed to provide undergraduate students with exciting opportunities to engage in academic research. Throughout the year, a list of UROP projects is made available for student applications. Selected students work closely with faculty members and their research teams, gaining valuable insights into a wide range of scientific fields.

Students who successfully complete UROP courses may be eligible for stipends as a form of encouragement or earn academic credits that count toward the fulfillment of program requirements. Students may also be sponsored to attend international academic conferences if their UROP project papers / posters are accepted for presentation. Those who demonstrate excellent research performance may also be nominated for internal awards in recognition of their contribution to research and innovation at HKUST.

Student Exchanges

Currently, the School has over a hundred exchange partner institutions around the world. Students joining the exchange program will be afforded opportunities to learn and experience new cultures overseas for an entire semester.

Europe

Austria
- MCI Management Center Innsbruck

Czechia
- Masaryk University

Denmark
- Technical University of Denmark
- University of Copenhagen

Finland
- University of Helsinki

France
- CY Cergy Paris University
- École Polytechnique
- Université Grenoble Alpes
- Université Paris-Dauphine - PSL

Germany
- Frankfurt University of Applied Sciences
- RWTH Aachen University
- Technische Universität Darmstadt
- Technische Universität Muenchen
- University of Stuttgart

Ireland
- Trinity College Dublin
- University of Galway

Lithuania
- Vilnius University

Luxembourg
- University of Luxembourg

Norway
- University of Bergen

Poland
- Jagiellonian University

Russia
- National Research University Higher School of Economics

Sweden
- Chalmers University of Technology
- KTH Royal Institute of Technology
- Linnaeus University
- Lund University

Switzerland
- École Polytechnique Fédérale de Lausanne
- ETH Zürich
- University of Zürich

The Netherlands
- Amsterdam University of Applied Sciences
- Erasmus University Rotterdam
- University of Groningen
- Utrecht University
- Vrije Universiteit Amsterdam
- Wageningen University & Research

Türkiye
- Sabanci University

United Kingdom
- Cardiff University
- Lancaster University
- Newcastle University
- University of Birmingham
- University of St Andrews
- University of Aberdeen
- University of Bristol
- University of East Anglia
- University of Exeter
- University of Glasgow
- University of Leeds
- University of Liverpool
- University of Reading
- University of Southampton
- University of Strathclyde
- University of Sussex

Oceania

Australia
- Monash University
- The Australian National University
- The University of New South Wales

North & Latin America

Canada
- The University of British Columbia
- University of Manitoba
- University of Toronto
- University of Waterloo

Mexico
- Tecnológico de Monterrey

United States
- Columbia University
- Cornell University
- Georgia Institute of Technology
- Iowa State University
- Lehigh University
- Missouri University of Science and Technology
- Northwestern University
- Rice University
- Rutgers, The State University of New Jersey
- Smith College
- Stony Brook University
- University of California
- University of Florida
- University of Hawai'i at Mānoa
- University of Massachusetts Amherst
- University of Notre Dame
- University of Virginia
- University of Wisconsin-Madison

Asia

Israel
- Tel Aviv University
- The Hebrew University of Jerusalem

Japan
- Institute of Science Tokyo
- Kyoto University
- Kyushu University
- Osaka University
- Sophia University
- The University of Tokyo
- Tohoku University
- Tokyo Institute of Technology
- University of Tsukuba

Mainland China
- Beihang University
- Beijing Institute of Technology
- China Foreign Affairs University
- East China Normal University
- Fudan University
- Harbin Institute of Technology
- Huazhong University of Science and Technology
- Nanjing University
- Peking University
- Shanghai International Studies University
- Shanghai Jiaotong University
- Shanghai University of Finance and Economics
- South China University of Technology
- Southern University of Science and Technology
- Sun Yat-sen University
- The Chinese University of Hong Kong, Shenzhen
- Tianjin University
- Tongji University
- Tsinghua University
- University of Chinese Academy of Sciences
- Xi'an Jiaotong University
- Zhejiang University

Malaysia
- Universiti Putra Malaysia

Philippines
- Ateneo de Manila University

Singapore
- Nanyang Technological University
- National University of Singapore
- Singapore University of Technology and Design

South Korea
- Ewha Womans University
- Korea Advanced Institute of Science and Technology
- Korea University
- Pohang University of Science and Technology
- Seoul National University
- Ulsan National Institute of Science and Technology

Taiwan
- National Central University
- National Chengchi University
- National Taiwan University
- National Tsing Hua University
- National Yang Ming Chiao Tung University

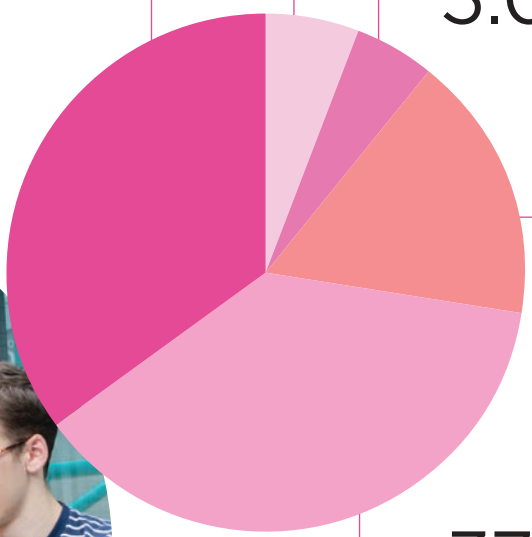
Vietnam
- VinUniversity

CAREER PROSPECTS

Our programs not only prepare students to become scientists who contribute meaningful academic knowledge for the betterment of society, but they also equip them to excel in their chosen professions such as industrial research and development, education, manufacturing, logistics, and business and finance.

Moreover, each year approximately 35-40% of our science graduates pursue further studies at prestigious universities around the world, including:

- California Institute of Technology
- Imperial College London
- ETH Zürich
- University College London
- University of Chicago
- National University of Singapore
- Yale University
- Columbia University
- King's College London
- The University of Sydney
- New York University
- Université PSL
- University of British Columbia
- The University of Queensland
- University of California, San Diego
- Technical University of Munich



5.6% Government and Related Organizations

5.0% Community and Social Services

35.2% Commerce and Business

16.8% Industry

37.4% Education

Students pursuing further studies are not included in this survey.
(Source: Graduate Employment Survey 2024, Career Center, HKUST)

HIGH-ACHIEVING ALUMNI

Rigil YEUNG

BSc in Biochemistry, Class of 2013
PhD in Life Science, HKUST, Class of 2018
Medical Advisor at MSD

Determined to devote my career to the biotech & pharma industry, I decided to study Biochemistry at HKUST.

The undergraduate curriculum equipped me with a strong foundation of scientific knowledge and allowed me to participate in world-class research projects. Besides, I had the privilege to participate in co-curricular programs offered by the School of Science, which were significant for my growth.

Graduating with first-class honors, I pursued my PhD degree at HKUST. At that time, I gained a better understanding of drug development and later joined the pharmaceutical industry smoothly. I am pleased to say that my years at HKUST were both memorable and rewarding.

Tommy LEE

BSc in Chemistry, Class of 2014
MSc in Environmental Engineering and Management, HKUST, Class of 2019
Generation Chemist at HK Electric

My three years of undergraduate studies have shaped my career path. HKUST provided me with plenty of opportunities, such as research, service learning, internship, and mentorship. I tried many of these and found the area that I wanted to endeavor the most.

The staff and professors here were always resourceful and ready to help. Nothing was unachievable as my classmates shared the same values, and we worked together towards our goals. I would say I am full of memories having grown-up here!

Manvela LUI

BSc in Mathematics, Class of 2016

Vice President, Cultural Transformation and Organizational Development at Fubon Bank (Hong Kong) Limited

Working as a consultant to diagnose organizational problems and devise solutions for our clients might not seem to have a direct relationship with math at first sight. However, math forms the backbone of how we approach things here – from dissecting a problem from different angles, drawing our findings from models and analysis, to providing support with multi-dimensional solutions. Most importantly, the determination of a breakthrough mindset, where we keep challenging ourselves and generating new ideas, originate from math, cultivated through every course and learning experience at HKUST.

Ronan CHAN

BSc in Biology, Class of 1996

General Manager, Cardiac Rhythm Management, Hong Kong & Taiwan at Abbott

At HKUST, I experienced the rigorous academic training and demanding assessments, which gave me a sense of connection to the competitive business world. HKUST is willing to invest and attract distinctive lecturers and professors. I still miss the chance with honor to attend lectures by world-famous biologists. Together with the communion atmosphere with the multicultural community and the beautiful landscape, I strongly recommend HKUST as a good choice for you!

Abigail WANG

BSc in Chemistry (International Research Enrichment Track), Class of 2020

PhD in Materials Science and Engineering, Massachusetts Institute of Technology

Process Engineer (R&D) at Lam Research

I am very thankful to HKUST for its rich resources and the opportunities I was exposed to during my time there. I developed most previous friendships, gained international experiences and seen a much bigger world in those four years. I would like to encourage the current students to be brave enough to step out of their comfort zone, for it is always through the most uncomfortable, challenging path that we grow and mature the most.

Pok Man TAM

BSc in Physics (International Research Enrichment Track), Class of 2018

PhD in Physics, University of Pennsylvania

Postdoctoral Fellow at Princeton University

It was very fruitful! I took advantage of the many research opportunities offered by the IRE program. In my first two years, I was in Prof. Lortz's research group doing experimental research on high-temperature superconductors. I continued my interest in this subject after I went for exchange to Columbia University and worked with a renowned theorist Prof. Andrew Millis on the novel superconductivity of FeSe. After returning to HKUST, I joined Prof. Vic Law's research group and started to train myself to be a condensed matter theorist and get to know the field of topological superconductors. The IRE program gave me plenty of training to be a serious researcher and opportunities to interact with brilliant scholars.

ADMISSIONS

Admissions Routes

Our undergraduate students are drawn from a wide range of academic, cultural and social backgrounds. Our applicants can be classified into the following categories:

- Local applicants applying via JUPAS, based on their Hong Kong Diploma of Secondary Education (HKDSE) results.
- Local applicants applying, based on their non-HKDSE qualifications (Local Direct Admissions).
- International applicants.
- Applicants from Mainland China, Taiwan and Macau (MTM).

Applicants follow either one of the following admissions routes:

- JUPAS Admissions (JUPAS applicants should submit their application to the JUPAS Office)
- Direct Admissions (All non-JUPAS applicants should submit their application directly to HKUST via the Online Application System for Undergraduate Programs)

For details, please visit https://join.hkust.edu.hk

Admissions Requirements (JUPAS)

Minimum Entrance Requirements for Science Programs

Applicants must achieve the following minimum grades in four core subjects and two electives:

Subjects	Science (Group A) (JS5102) Science (Group B) (JS5103) International Research Enrichment (IRE) (JS5101) Biomedical and Health Sciences (BMH) (JS5118)	Science (Group A) with Extended Major in Artificial Intelligence (SSCI-A (AI)) (JS5181)
English Language	Level 3	Level 3
Chinese Language	Level 3	Level 3
Mathematics (Compulsory Part)	Level 2	Level 3
Citizenship and Social Development	Attained	Attained
Elective 1 (M1 / M2 can be accepted in place of an elective)	Level 3	Level 3
Elective 2	Level 3	Level 3

Science (Group A), Science (Group B), SSCI-A (AI) and BMH programs:

The weighted scores of the following 5 subjects are summated to form the admissions score:

Subjects	Weightings	
	Science (Group A) / SSCI-A (AI)	Science (Group B) / BMH#
English Language	x 1.5	
Mathematics (Compulsory Part)	x 1	
Best science elective* Must be one of M1 / M2 / Biology / Chemistry / Physics	Physics / M1 / M2 (x 2)	Biology / Chemistry (x 2)
Best two other subjects* Can be core subject, M1 / M2 or any Category A subject	Biology / Chemistry (x 1.5)	Physics / M1 / M2 (x 1.5)

*Notes: The highest scores of at most TWO weighted science electives will be taken in the admissions score calculation.

#Note: Satisfactory interview performance is required for admission to the BMH program. Applicants should put the BMH program among the Band A choices to secure an interview opportunity.

International Research Enrichment (IRE) program:

The unweighted scores of the following 5 subjects are summated to form the admissions score:

Subjects	Weightings
English Language	x 1
Mathematics (Compulsory Part)	x 1
Best two science electives: Must be from: Biology, Chemistry, Physics, M1 / M2	x 1
Next best subject: Can be core subject, M1 / M2 or any Category A subject	x 1

Note: Satisfactory interview performance is required for admission to the IRE program. Applications should put the IRE program among the Band A choices to secure an interview opportunity.

JUPAS Score Calculation

Grade-to-score conversation scale:

HKUST adopts the following conversation scale in calculating the JUPAS admissions scores*:

HKDSE subject grade	5**	5*	5	4	3	2	1
Admissions score	8.5	7	5.5	4	3	2	1

JUPAS Score Calculator https://join.hkust.edu.hk/admissions/jupas

*Note: For Category A Core/Elective Subjects only

Admissions Requirements (Direct Entry)

HKUST School of Science considers the following factors when making admissions decisions:

- Public examination results and academic performance
- Personal statement
- Non-academic achievements
- Referees' reports
- Interview performance (if applicable)

Applicants with International Qualifications (e.g. IBDP, GCEAL, SAT/AP, etc):

In addition to fulfilling the University's general requirements, applicants applying for:

- **Science (Group A)** and **SSCI-A (AI)** programs: Must have at least one senior-level subject from Mathematics / Physics
- **Science (Group B)** and **BMH** programs: Must have at least one senior-level subject from Biology / Chemistry
- The **IRE** program: Must have at least one senior-level subject from Biology / Chemistry / Mathematics / Physics

Applicants with Joint Entrance Examination for Universities in PRC (JEE, PRC) Qualification:

Applicants must fulfill either one of the following requirements:

1) Science stream
2) Candidates from provinces that do not distinguish between Arts and Science streams are required to take at least one of the following subjects:
   - for **Science (Group A)** and **SSCI-A (AI)** programs: Physics
   - for **Science (Group B)** and **BMH** programs: Chemistry, Biology / Life Science
   - for the **IRE** program: Chemistry, Physics, Biology / Life Science

Applicants with Post-Secondary Qualifications:

Applicants must fulfill either one of the following requirements:

1) Completion of an associate degree in a post-secondary institution recognized by HKUST
2) Completion of a Higher Diploma program in a post-secondary institution recognized by HKUST
3) Transfer students from local or overseas degree programs: GPA B+ or GPA of 80% is normally expected

Joint School Programs:

For the Biotechnology and Business (BIBU) program, please visit

https://bibu.hkust.edu.hk

For the Mathematics and Economics (MAEC) program, please visit

https://maec.hkust.edu.hk

Scholarships

The University and the School of Science offer several scholarships to top students from all backgrounds, based on their academic merits and non-academic achievements upon entry and during the course of their studies. For details, please refer to

https://sfao.hkust.edu.hk

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