

# SCHOOL OF SCIENCE

UNDERGRADUATE  
EDUCATION



THE HONG KONG  
UNIVERSITY OF SCIENCE  
AND TECHNOLOGY

# CONTENT

## **Introduction to School of Science** P.1

## **Science School Programs** P.2

Program Structure  
International Research Enrichment (IRE) Program  
Majors and Minors  
Life Science  
Mathematics  
Physics  
Chemistry  
Ocean Science and Technology

## **Joint School Programs** P.14

BIBU, MAEC and DSCT Programs

## **Student Life @ HKUST** P.16

Student Advising  
Enrichment Program – “Science for Success”  
Current Students Sharing

## **Career Prospects** P.22

Career Survey  
Alumni Sharing

## **Admission and Scholarships** P.25

# INTRODUCTION TO SCHOOL OF SCIENCE

**Join HKUST, a top University in Asia, where academicians gather, educators inspire, creative minds thrive and young leaders bloom. You will grow in this vibrant and exciting community and you will fly high when you leave.**

## **School of Science**

The *School of Science* is committed to pursuing cutting-edge research, making ground-breaking discoveries and establishing new research paradigms. Our quality 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 who are capable of making a difference to society.

High quality education requires dedicated educators. The School of Science has recruited outstanding faculty members, many of whom have graduated from top-notch universities around the world such as Cambridge, Columbia, Cornell, Harvard, MIT, Oxford, Princeton, UC Berkeley, UCLA and U Penn. They are world-renowned in their research fields and have attained international stature in recognition for their scientific contributions. With strong commitment to both teaching and research, they instill in our students the importance of scientific rigor and ethics, and at the same time, serve as mentors to inspire and encourage our students to achieve their full potential.

## **Groundbreaking Research**

- Research discoveries in neuroscience, organic chemistry, organic solar cells, food safety testing, aggregation-induced emission (AIE), light-emitting materials, nanotechnology, acoustic/elastic metamaterials, protein structure and function, molecular basis of brain diseases and genome-mining based bioactive compound discovery, etc.
- Exploration into contemporary research areas in science: Particle Theory and Cosmology, Super-resolution Imaging in Biophysics, Computational Science, Representation Theory etc.

## **World-class Research Facilities**

- State Key Laboratory of Molecular Neuroscience
- Hong Kong Branch of Chinese National Engineering Research Center for Tissue Restoration and Reconstruction
- Biotechnology Research Institute
- William Mong Institute of Nano Science and Technology
- Joint KAUST-HKUST Micro/Nanofluidics Laboratory
- GSK R&D China-HKUST Neuroscience Laboratory
- Sino-German Nano-Analytical Laboratory
- Coastal Marine Laboratory
- Center for Cancer Research
- Center for Chinese Medicine R&D
- Center for Fundamental Physics
- Center for Metamaterials Research
- Center for Quantum Materials
- Center for Scientific Computation
- Center for Space Science Research
- Center for Statistical Science
- Center for Stem Cell Research
- Center for Systems Biology and Human Health
- Molecular Neuroscience Center
- SSCI-IAS Super-resolution Imaging Center

LIFS

MATH

PHYS

CHEM

OCES

# SCIENCE SCHOOL PROGRAMS

## Program Structure

Our 4-year curriculum enables students to have a broader knowledge base and more flexibility in their studies. Students admitted to the School of Science can opt to declare their major in any program in the School of Science, as well as the Joint School and Interdisciplinary Programs.



## 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 requirement.

Minimum credit requirement for graduation:

# 120

## Year 2-4

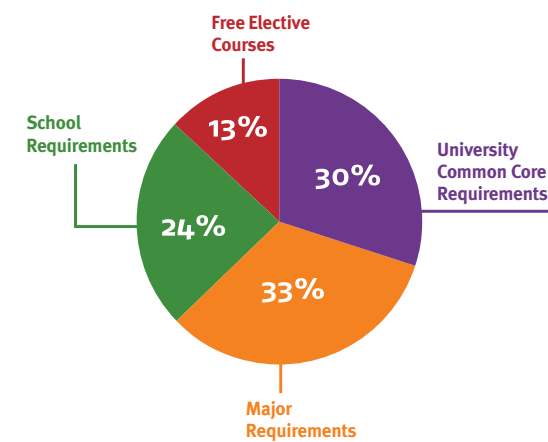
Students will declare a major program in their second year. They may also consider declaring a minor program in order to add a secondary area of focus to their studies.

Normative period of study:

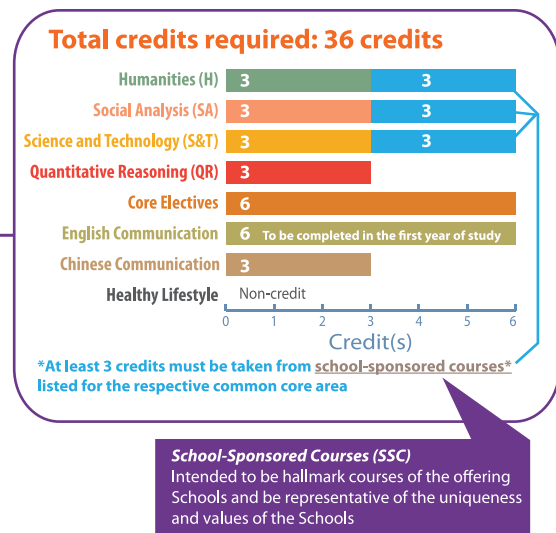
# 4

Years

4-Year Curriculum:



Graduation Requirement:



Our aim is to provide a diverse learning experience for students. Lectures, laboratory courses, Capstone projects and language courses tailor-made for science students are integrated into the 4-year curriculum to ensure that students have a solid foundation and adequate exposure to a range of science disciplines.

Along with the desired study path, students will have ample opportunities to enjoy a slew of co-curricular programs and enrichment activities aimed at widening exposure and fostering personal development.



# 2

## International Research Enrichment (IRE) Program

The IRE program is an independent and separate program choice. It is a pioneer study track tailor-made for students with particular interest in 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 to a successful career in scientific research. It offers science students an early opportunity to nurture their research abilities and solidify their discipline-specific knowledge in regular Science programs.

IRE students will enjoy:

- Free choice among **five major programs**: **Biochemistry and Cell Biology, Biotechnology, Chemistry, Mathematics, and Physics**;
- Opportunities to participate in advanced research projects under the supervision of **world-class professors**;
- Opportunities to meet with **Nobel Laureates and renowned scientists** from around the world through involvement in the activities of the Institute for Advanced Study at HKUST;
- **Exchange opportunity** in a renowned foreign university including *University of California, Berkeley; Columbia University; Northwestern University; ETH Zurich, Switzerland; University of British Columbia, etc.*;
- **Summer research internship opportunity** in foreign universities/national laboratories such as: *Cambridge; Chicago; Johns Hopkins; CERN (European Organization for Nuclear Research), Switzerland; CNRS (French National Center for Scientific Research), France, etc.*;
- **Scholarship** support for overseas learning trips.

LIFS

MATH

PHYS

CHEM

OCES

# MAJORS AND MINORS

## Science School Programs

**BSc in Biochemistry and Cell Biology (BCB)**

**BSc in Biological Science (BISC)**

**BSc in Biotechnology (BIOT)**

**BSc in Biotechnology and Business (BIBU)**

**BSc in Chemistry (CHEM)**

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

**BSc in Data Science and Technology (DSCT)**

**BSc in Mathematics (MATH)**

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

**BSc in Mathematics and Economics (MAEC)**

**BSc in Ocean Science and Technology (OCES)**

**BSc in Physics (PHYS)**

- Applied Physics Option
- Physics and Mathematics Option
- Honors Physics Option



## Joint School Programs

School of Science &  
School of Business and Management

**BSc in Biotechnology and Business (BIBU)**

**BSc in Mathematics and Economics (MAEC)**

School of Science & School of Engineering

**BSs in Data Science and Technology (DSCT)**

## Interdisciplinary Programs

**BSc in Environmental Management and Technology (EVMT)**

**BSc in Individualized Interdisciplinary Major (IIM)**

**BSc in Risk Management and Business Intelligence (RMBI)**

**Dual Degree Program in Technology and Management (BEng/BSc & BBA)**

## Minor Programs

Students can enjoy additional learning experiences by enrolling in various minor programs offered by different Schools.

Offered By

School of Science

School of Engineering

School of Business and Management

School of Humanities and Social Science

School of Science, School of Engineering and School of Business and Management

Programs\*

Actuarial Mathematics  
Astrophysics and Cosmology  
Biological Physics  
Biological Science  
Biotechnology  
Chemistry  
Mathematics  
Ocean Science and Technology  
Physics

Aeronautical Engineering  
Big Data Technology  
Bioengineering  
Design  
Environmental Sustainability and Management  
Information Technology  
Robotics  
Sustainable Energy Engineering  
Technology Management

Business

China Studies  
Humanities  
Social Science

Entrepreneurship

LIFS

MATH

PHYS

CHEM

OCES

## **BSc in BIOCHEMISTRY & CELL BIOLOGY (BCB)**

Students will study how biomolecules, which are the fundamental building blocks of all living organisms, work harmoniously in cell-free experimental systems (Biochemistry) and also within cells (Cell Biology). The early curriculum is broad-based and teaches students the fundamental concepts and principles of Biochemistry and Cell Biology. This will

enable students to explore and develop their own interests in various aspects of modern molecular life sciences. As they progress through the program, they will take more advanced and specialized elective courses. BCB students will also have the option of engaging in intensive practical training and research opportunities.

# LIFE SCIENCE

### **/Career Prospects**

BCB graduates will have a broad range of career options. Students will be well-prepared for postgraduate research studies and future employment opportunities in academia, medical and biotechnology research. In addition, BCB graduates will also be fully equipped to pursue other vocational careers in private and government sectors requiring a life science background, including healthcare, biotechnology and education. With recent advances in technology and societal expectations driving an expansion in career and employment opportunities, life science is truly at exciting times.

### **/Highlight**

The BCB program gives students an opportunity to build a firm foundation in different aspects of modern biochemistry, cell biology, molecular biology and genetics. It also nurtures students who are motivated to pursue postgraduate training and research careers in both academic and industry sectors.

## **BSc in BIOTECHNOLOGY (BIOT)**

This program focuses on basic and advanced biotechnological elements related to research, development and manufacturing of biotechnology products, including medicines, cosmetics, agricultural goods, food and healthcare devices. It provides students with theoretical and practical knowledge of the latest biotechnological developments, with particular focus on the applied aspects of life sciences. The curriculum also requires basic understanding of concepts across various biological spectra including biochemistry, cell biology, molecular biology, microbiology and genetics.

### **/Career Prospects**

The BIOT major equips students with various basic and specific biotechnological elements to meet the growing demand in the markets of pharmaceuticals, agriculture, business and education. The underlying objective of the major is to serve as a biotechnology powerhouse to provide a fresh supply of capable manpower to propel this emerging industry. Career opportunities are amply available in both the private and government sectors.

### **/Highlight**

The BIOT program provides students with sound theoretical training in modern life sciences, and acquaints students with practical skills that are crucial for biotech product research, development and production.

## **BSc in BIOLOGICAL SCIENCE (BISC)**

This versatile program aims to provide students with a broad coverage and a basic understanding of major principles, concepts and technologies of organismal and systems biology, including animal, plant, evolutionary and environmental biology. The flexibility of this major facilitates students in undertaking more elective courses offered by other academic departments such as Engineering, Social Sciences, Humanities and Business.

### **/Career Prospects**

The emphasis of this program is to equip students with a broad scope of general biological knowledge, which provides students with comprehensive training in transferable skills as well as opportunities in independent learning required for all career paths. Our Biological Science students are armed with strong skills in acquisition of scientific enquiry and critical thinking and the majority of graduates accept jobs requiring interdisciplinary knowledge. Moreover, students will be equipped with strong problem solving skills and analytical skills throughout their science training. A wide range of career options will be available to our Biological Science graduates.

### **/Highlight**

The BISC program equips students with knowledge in modern biology related to biosystems, health and education. It facilitates students in broadening their skill base via a selection of elective courses in Engineering, Social Sciences, Humanities and Business.



## **BSc in MATHEMATICS (MATH)**

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. Students will be able to select a track of study from our diverse Mathematics program.

There are seven tracks under the Mathematics program:

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

# MATHEMATICS

### **/Career Prospects**

On average around a quarter of MATH graduates pursue further studies, a majority of whom have enrolled in institutions abroad. Another quarter of graduates choose careers in teaching. The remaining graduates are employed in various business and service sectors, including but not limited to administration and management, computer programming, data analysis, accounting, insurance, marketing sales, purchasing, banking and finance, and academia.

## **BSc in DATA SCIENCE AND TECHNOLOGY (DSCT)**

This is a joint program offered by the Department of Mathematics and the Department of Computer Science and Engineering. For details, please refer to page 15.

## **BSc in MATHEMATICS AND ECONOMICS (MAEC)**

Starting from the 2016-17 academic year, this program is offered as a Joint School Program with the School of Business and Management. See page 14 for details.

## **BSc in PHYSICS (PHYS)**

Physics encompasses everything from the tiniest elementary particle to the ultimate fate of the universe, and provides the foundation for all modern science and engineering. By choosing the Physics program, students will have the opportunity to learn about exciting topics ranging from quantum physics and nanotechnology, to quarks, black holes and superconductivity.

The program offers three options:

- Applied Physics Option
- Physics and Mathematics Option
- Honors Physics Option

# PHYSICS

### **/Career Prospects**

Students can pursue further study or work in the fields of education, research and development, technical sales, forensic science, medical industry, commerce, banking, etc. Since students are rigorously trained in analytical and problem solving skills, a wide range of job opportunities await them. Career opportunities are amply available in both the government as well as private sectors.

### **/Highlight**

The Physics program provides students with both depth and breadth in their studies. Students who take this program can build a solid and broad background in physics and receive rigorous training in analytical reasoning and hands-on experimental skills. It prepares students for all science-related careers, or for further studies in physics and related fields.

MATH

PHYS

CHEM

OCES



## **BSc in CHEMISTRY (CHEM)**

Students will study all aspects of chemistry and related disciplines. General areas covered include analytical chemistry, inorganic chemistry, organic chemistry, and physical chemistry. Specialized areas include environmental chemistry, medicinal chemistry, biological chemistry, polymer chemistry, materials chemistry including nanostructures, advanced instrumentation, advanced computational and theoretical chemistry.

The program offers four options:

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

# CHEMISTRY

### **/Career Prospects**

Our graduates have gone on to become chemists or technical staff in government laboratories or private accredited laboratories, school teachers, environmental consultants, chemical engineers, Chinese medicine researchers, pharmacists, marketing representatives for lab equipment suppliers and computer companies, scientific patent officers, script writers, reporters for science journals or magazines, as well as postgraduates that pursue higher degrees in both local and overseas universities.

### **/Highlight**

This program provides excellent general training in both analytical thinking and problem solving. The curriculum, which includes basic training in analytical, inorganic, organic, and physical chemistry and modern laboratory techniques and skills, has been specifically designed to allow students maximum flexibility in determining the extent of their specialization.

## **BSc in OCEAN SCIENCE AND TECHNOLOGY (OCES)**

BSc in Ocean Science and Technology is an integrative program offered by the Department of Ocean Science. It aims to provide students with a comprehensive foundational understanding of the cross-disciplinary ocean science and technology, and to provide first-hand exposure to the latest scientific and technological development related to investigating, conserving and managing

ocean resources. General areas covered include the foundational (e.g. biological, chemical and physical processes and ecosystem functions), technological (e.g. instrumentation, data management, pollution tracking), applied (e.g. marine biotechnology and pollution bioremediation) and socioeconomic (e.g. conservation and fisheries) aspects of ocean science.

# OCEAN SCIENCE AND TECHNOLOGY

### **/Career Prospects**

Hong Kong is a coastal city with rich and diverse marine resources because of its unique geographical location in the biologically diverse Western Indo-Pacific region. The demand for talents and professionals in the public, NGOs and private sectors is higher than ever due to the need for environmental impact assessment for future coastal infrastructure projects and the burgeoning business of ecotourism. Graduates of Ocean Science and Technology program are competitive in higher studies and job market, while they will be well equipped to work in environmental consultancies, maritime industries, local environmental NGOs, and government agencies.

### **/Highlight**

A major emphasis of this curriculum is the provision of practicum experience, experiential learning, study trips and overseas attachment to enhance students' academic, career and personal development. Ultimately, the goal of the program is to equip the students with the skillsets and attributes that are needed to serve the society by becoming educators, ocean scientists and technologists, and other professionals in environment-related sectors, both locally and internationally.





# JOINT SCHOOL PROGRAMS

SCHOOL OF SCIENCE & SCHOOL OF BUSINESS AND MANAGEMENT

## **BSc in BIOTECHNOLOGY AND BUSINESS (BIBU)**

The newly developed program aims to groom students with a hybrid interest in both biotechnology applications and business operations. It offers a broad-based learning experience that cuts across biotechnology, life science and business management theories, in which students will gain transferrable skill sets to place them in good stead in the increasingly competitive job market.

### **/Career Prospects**

The holistic BIBU experience prepares students to excel in any career path they aspire to. Potential employers include multinational pharmaceutical companies, vendors of biotechnology products / services, consulting firms focusing on the biotechnology and pharmaceutical industries, and many more.

### **/Highlight**

It is the first undergraduate program in Hong Kong to offer rigorous training in both biotechnology and business, which is designed to prepare students for successful managerial or entrepreneurial careers within the biotechnology industry. The interdisciplinary curriculum equips students with a solid foundation of essential technical knowledge (e.g. recombinant DNA technology, bioprocessing, and genetic engineering) and business know-how. (e.g. accounting, economics, finance, operations management etc.)

## **BSc in MATHEMATICS AND ECONOMICS (MAEC)**

**As the complexity and technical aspects of contemporary economic problems exhibit strong synergy between mathematics and economics, this joint school program aims to provide students with solid training in the fundamental theories of both disciplines. The MAEC program is suited to students who are keen on acquiring a strong quantitative background in economics to work in the business and financial sectors, or who intend to pursue further studies in applied mathematics or business fields such as economics, finance, and management science.**

### **/Career Prospects**

Career opportunities in the banking and finance industry are promising for those who are capable of applying mathematical tools to understand the financial markets and make economic forecasts. A number of our graduates have joined top-ranking financial institutions and multinational firms. Moreover, MAEC graduates are equipped with sufficient background for entry into postgraduate programs in economics, financial mathematics, statistics, and other business-related fields. Recent graduates have been admitted into PhD/Master's programs at leading universities such as University of Oxford, Stanford University, and Yale University.

### **/Highlight**

It is a unique undergraduate program in Hong Kong that combines modern economic theory with advanced mathematical skills, providing students with an excellent foundation for a successful career in the business, finance, and public sectors.

The balanced curriculum instills in students quantitative reasoning skills, conceptual understanding, and the ability to effectively communicate in mathematics and in the language of economics and social sciences. This broad-based program stresses lifelong learning abilities that translate seamlessly into various career pathways.

SCHOOL OF SCIENCE & SCHOOL OF ENGINEERING

## **BSc in DATA SCIENCE AND TECHNOLOGY (DSCT)**

Nowadays, we are living in a world full of massive data. How do we interpret and utilize them scientifically and technically? This joint school program (BSc in Data Science and Technology) will equip students with various mathematical tools, data analytical methods, and IT skills to make sense of data obtained from various sources. Through four years training, students are expected to be familiar with basic knowledge of data analytics and hands-on skills including programming skills and mathematical modeling. This program will also provide students industry experience to apply their knowledge to real life application that will give them a solid foundation for their future career.

### **/Career Prospects**

A lot of data specialist / scientist positions are created every day in different sorts of business and industry sectors to make use of the massive data collected there. Graduates of data science and technology are of high demand in today's job market, and most of them will be employed in those sectors such as IT, engineering, and finance. There will be other career opportunities such as management and sales.

### **/Highlight**

The new DSCT program is jointly offered by the **School of Science** and the **School of Engineering in HKUST**. This program will be started from the fall semester of 2018. The program will equip students to use a wide spectrum of mathematical and IT tools, and to develop basic knowledge of data analysis and programming skills that will allow them to understand and analyze actual phenomena of massive data obtained from rich information sources. The program will provide students a solid foundation in the fundamental and in-depth knowledge in specific area(s) with emphasis on students' mathematical and computational disciplines. Students will also receive hands-on experience and expert guidance to acquire practical skills of data analysis that will provide them a good step to their future. Areas of Expertise of this program include machine learning, classification, clustering, data mining, database management, cloud computing and data visualization etc.



# 1 STUDENT LIFE @ HKUST

## **Student Advising**

The Office of Academic Advising and Support was established in the School of Science to provide students with general orientation to the university, initial advice on course selection and consultation on the choice of major. The Office provides guidance to students on academic-related issues through –

- Providing accurate and relevant information about academic programs and other educational experiences available to them;
- Providing one-on-one consultation on the choice of major and possible double major / major-minor combinations to suit their interests, abilities and goals;
- Explaining university regulations, graduation requirements, and institutional policies and procedures;
- Enhancing their awareness of available educational resources on campus such as internship, mentorship, undergraduate research and exchange programs;
- Encouraging the use of the institutional and community services in support of academic success.

**MAGNET (Make A Great Net)**, a Peer Mentoring Program in the School of Science that aims to help freshmen make a smooth transition to HKUST by providing a supportive environment in which they will meet a diverse group of students who share similar experiences and interests. Peer mentors are selected senior year students from different science disciplines, who are interested in assisting new students in overcoming the obstacles they may encounter 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 – SCIE1000 Science School Induction**

SCIE1000 Science School Induction, led by faculty advisors, advising staff and peer mentors, is a one-year course designed to provide support and guidance for all year one science students. It offers activities such as Science Majors Week, Popular Science Talk etc., to help students adapt to university life, explore different majors and connect with faculty and other students.

# ENRICHMENT PROGRAM – “SCIENCE FOR SUCCESS”

## **Exchange Program**

Currently, the School has more than ninety exchange partner institutions covering regions including Australia, Europe, North America, Southeast Asia and Mainland China, etc. Students joining the exchange program will be offered opportunities to experience overseas learning and new cultures for an entire semester.

## **Undergraduate Research Opportunities Program (UROP)**

UROP is HKUST’s signature program for undergraduate students to engage in academic research, with the aim of helping them develop a broad and insightful perspective on their areas of interest, under the supervision of seasoned faculty.

## **Career Training and Internship Opportunities**

Students will be provided with an array of career training activities including one-on-one career consultation on exploring their career goals, mock interviews with HR experts from different industries, and firm visits. The School will also provide individualized services such as referral to partner companies to help students find internship experiences and graduate jobs.

# 2





elephant conservation and voluntary teaching to villagers. The trip will also include visiting the UNESCO heritage sites in Sri Lanka.

### **Cultural Study Tours to Mainland China**

Our School has established close relationships with renowned institutions such as China Pharmaceutical University, Tsinghua University and Sichuan University to organize various study tours, encouraging students to step out of their comfort zone to experience a glimpse of Chinese culture.

### **SCI/NUCLEUS Social Service Team**

SCI/NUCLEUS is a student-driven social service team established to mobilize Science students, alumni and staff to serve the community. Passionate students will be selected as Social Leaders to not only participate in voluntary services, but also to initiate more activities for members to join.

### **“Knowledge Without Border” Series**

To broaden students’ horizon beyond their major studies, seminars and workshops on a wide spectrum of topics covering culture, politics, economics, and environment, will be held on a regular basis.

### **University Student Sponsorship Program in Wildlife Conservation (USSP)**

Collaborating with the Ocean Park Conservation Foundation Hong Kong, selected students will be fully sponsored to travel overseas to gain first-hand research experience, while contributing to wildlife conservation.

### **MenTernship Program**

Students joining the MenTernship Program will be offered opportunities to shadow social dignitaries, through social encounters and internship experience in the mentors’ respective fields.

### **Sri Lanka Cultural Exploration and Service Trip**

To raise students’ awareness of serving the community, service learning trips to Sri Lanka has been held for students. Students will be involved in various service projects, such as organic farming,

## CURRENT STUDENTS SHARING



Studying in HKUST allows me to obtain the latest information in many research fields from experts all around the world. My major in Biotechnology gives me the chance to find out the demand for healthcare products by visiting different groups of society. By applying what we learnt, for example the characteristics of different bacteria, we can make our own products through trial and error.

What’s even more exciting is the co-curricular activities that I have participated in. Throughout these years, I have joined various programs held by HKUST. The most remarkable one is the exchange program during Year 3’s fall semester, in which I have been staying in the US for half a year. By interacting with the students in US, you will realize how amazing this world can be. Such experience does not only widen your vision, but also goes far beyond your imagination.

Besides, being an executive committee member of a society, joining leadership and volunteers program, speaking in front of 400 people as a student ambassador, living in a student residence hall, running on the fields in a sunny day as a sport team member -- all of these should be on the “must-do list” for every university student. Of course, they are not everything; there is so much more left for you to discover. Hope to see you soon at HKUST.

**Raymondo TANG**  
Year 4, Biotechnology

Majoring in Chemistry is like exploring the realm beyond our sight as we get to learn the mechanisms beneath physical matter. I personally enjoyed performing experiments and visiting advanced labs. I love that professors, TA and staff are always passionate and helpful to guide us through when we have struggles. University life is always more than its academics. School of Science has not only provided me platforms to meet friends from other countries, but also job opportunities to develop skills and learn about myself. I am proud to say I have grown a lot with the aid from UST.

**Hercules LEUNG**  
Year 4, Chemistry

The Biotechnology and Business program has provided me with exposure to a holistic learning experience that combines both biotechnology technical knowledge and business soft skills. In the program, I have been engaged in seminars and outreach activities which provided me with relevant industry knowledge and insights on current trends in biotechnology. On top of academic studies, the staff in SCI/HOME are very supportive in giving advice in personal development and career planning. Through a variety of learning trip and social service opportunities, I have been able to get exposed to what is happening in society, reflect on myself and gain insights on resolving social problems. I am really glad to learn and grow under an environment where I am able to position myself, find my life values and pursue all-rounded personal development.

**Victor WONG**  
Year 3, Biotechnology and Business



Studying Physics in the International Research Enrichment (IRE) program, I am particularly fascinated by high energy physics and hope to do scientific research in this field. The IRE program serves as a hub for research-minded students in the School of Science, where we are given guidance and resources to explore our interests. For example, the IRE-specific “Guided Study on Research” courses let us examine various topics in real-world research under the direct supervision of professors. Moreover, the school-sponsored overseas summer research is especially rewarding, as we get to immerse in the academic culture of a foreign institution and work with renowned faculty worldwide. Currently, I am undertaking a project in the Undergraduate Research Opportunities Program (UROP), in which I learn firsthand about motivations and techniques in research. I even had the opportunity of traveling to a conference in Nanyang Technological University to present our team’s findings and hear about others’ discoveries. HKUST has a strong research environment, and the IRE program augments this experience for science students.

**William YAM**  
Year 3, Physics (IRE) and Mathematics

As a person who is passionate about physics, learning physics at HKUST is very enjoyable. In HKUST, I meet a lot of talented schoolmates and seniors who have a strong passion for scientific research. It is very inspiring to discuss academics and career paths with them. I have participated in the UROP which provides me a taste of doing research. The guided research courses for IRE students also provide me a vulnerable opportunity to know more about the professors and their research interests. Apart from studying, I also join different extra-curriculum activities. For example, I was a peer mentor of School of Science last year. In this program, I met some funny group members and mentees which improve my soft skills and expand my social network.

**Weijun YUAN**  
Year 3, Physics (IRE)

It is a really fabulous experience. Studying in HKUST provides a unique environment to concentrate and relax. When I face problems, sitting near the seafont can always give me a sign of relief.

To be concise, studying mathematics in HKUST is a good place because of Maths Support Center (MSC). I always go to MSC to ask questions and they will explain in detail, which helps me to consolidate my knowledge.

It is not only about studying. Frankly, there are ranges of different activities. Particularly, I enjoy going exchange. Either HKUST or School of Science from HKUST will provide different opportunities to exchange. No matter choosing the same academic field or not, I can learn sometime new from others. And mostly, it gives me a chance to get used to independence. Therefore, I am looking forward to my exchange in this summer. It will be an unforgettable experience in my lifetime.

**NG Chun Lok**  
Year 4, Mathematics



Studying Environmental Science in HKUST has been immensely enjoyable because there is always plenty of learning resources. This programme does not only provide comprehensive education in exploring the relationship between human and environment, but also offer abundant opportunities for student to organize different environmental protection campaigns. Furthermore, field trips and laboratories courses equipped with observation and analytical skills. In addition, the School of Science encourages us to join various environmental protection-related study tours, training programmes, workshops. For career planning, students are welcomed to find consultation service, the career building course, CV and interview workshops.

I have no regret of studying in HKUST which gives me abundant resources to learn.

**CHAN Yik Kui**  
Year 3, Environmental Science



Chem is try. The IRE programme has provided me plenty of opportunity on trying out of what research is like and the freedom in exploring various fields ranging from computer simulations to drug design before deciding on settling on any of them. Being part of the IRE programme also grants me the experience on having overseas experienced and I am privileged to be part of a front-line research team in the US in the coming semester working on cutting-edge solar cell technologies. These valuable opportunities plays important role in paving the way to further studies. Being part of the IRE community is never lonely as you are going to meet many great minds that are always passionate about hard-core science and are more than happy to discuss about any topic anytime.

**CHAK Man Him**  
Year 3, Chemistry (IRE)

After one-year of exploration of various science subjects, I chose Mathematics & Economics as my major and started the research with my supervisor through Undergraduate Research Opportunities Program (UROP). With both quantitative and analytical skills as well as business background, my major equips me well for further postgraduate study.

Except for the all-rounded academic training, there are numerous activities such as CEOs talks, career advising and trainings from both School of Science and School of Business. I participated in the MenTernship and HeadStart Program and was eventually given an Internship in Shanghai last summer. Moreover, the School of Science offers plenty of enrichment opportunities. I get more familiarize with the actual world and my passion for conducting further research on development economics is aroused through joining the SCI/NUCLEUS Social Service Team.

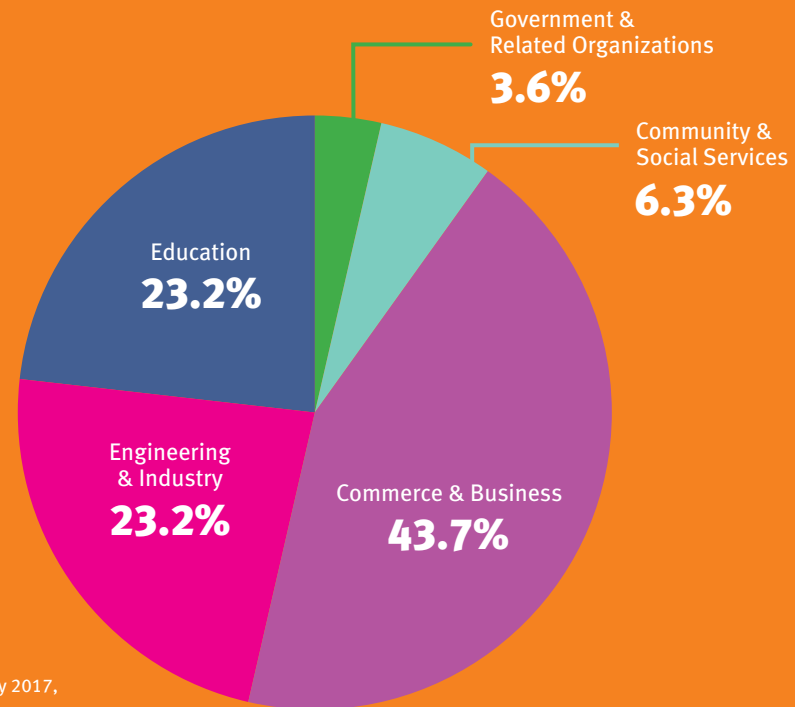
Last year, I was offered an Exchange Program at University of California, Berkeley and it allowed me to exchange ideas with top scholars and students. It was amazing! The School of Science definitely provides us with a platform to explore the world! Keep open-minded and passionate, grab the chance and enjoy your study and life!

**LI Siqi**  
Year 4, Mathematics and Economics



# CAREER PROSPECTS

## Career Survey



(Source: Graduate Employment Survey 2017, Career Center, HKUST)

Statistics of students pursuing further studies are not included in the above survey. Each year, about 20% of our science graduates pursue further studies in both local and overseas universities. These overseas universities include:

- California Institute of Technology
- Carnegie Mellon University
- Columbia University
- Cornell University
- Imperial College London
- National University of Singapore
- Rice University
- Stanford University
- University of Chicago
- University of Edinburgh
- University of Oxford
- University of Toronto
- University of Washington
- University of Wisconsin-Madison



## Alumni Sharing

Apart from the fascinating campus setting, the HKUST undergraduate training has provided me with a strong science fundamental knowledge especially under the guidance of experienced scholars. It has equipped me with great analytical, organizational and problem solving skills. These skills are still applicable in my current design work as design is also a process to find the most optimal solution for environmental, technological and sociological problems.



**Kinando HEUNG**  
Senior Landscape Architect (Head of the team)  
BSc (Chemistry)



I have learned that every scientific theory is derived from logical reasoning and deduction. This has allowed me to easily understand the anatomy, physiological and nutritional impact the performance of horses. The great thing about science is not the theories, but the process of arriving at these theories. They can be applied to many subjects other than science, including business and law modules.

**Sidney TAM**  
Management Trainee  
Darley Flying Start  
BSc (Biochemistry)

I have always been passionate in looking for creative solutions to solve different problems. Starting my business is like a science experiment — you identify a problem, construct a hypothesis and experiment with different possibilities. You must have perseverance to strive for the best solution!



**Francis KWOK**  
Co-Founder & Chief Executive Officer  
Radica Systems Limited  
BSc (Physics)

HKUST Chemistry – where future world-class scientists are born! I am so honored to be a member at HKUST School of Science. The Department of Chemistry provides unlimited opportunities and resources for us to unveil secrets in this universe and the professors have built a positive and enjoyable learning atmosphere. Apart from consolidating theories in lectures, we were also trained to be professional in the fully-equipped laboratories. In one of the semesters, I was nominated as an exchange student to America by the School of Science. That was my first time to study overseas, to meet buddies from the other continents and to explore the natural beauty of the United States. Another experience worth mentioning was my summer intern as a laboratory assistant in a local food company in Hong Kong. I was given a chance to handle advanced analytical instruments which we can just see in the pictures in our lecture notes. After this real working experience, it confirms me to become an analytical chemist in the future.



**Chun Kit AU, Samson**  
PhD study in Hong Kong University of Science and Technology  
Class of 2018 graduate  
BSc in Chemistry

# ADMISSION AND SCHOLARSHIPS

## Admission Requirements

### For JUPAS-HKDSE Applicants

Program	JUPAS Code	English	Chinese	Mathematics	Liberal Studies	Elective 1	Elective 2	Specific Requirements
						M1 / M2 can be accepted in place of an elective		
Science	JS5100							One of: Biology / Chemistry / Physics / Combined Science / Integrated Science / M1 / M2
IRE	JS5101	3	3	2	2	3	3	
MAEC	JS5813	4	3	3	2	3	3	One of: Biology / Chemistry
BIBU	JS5811	4	3	3	2	3	3	

Note: Students admitted to the Science program can opt to declare their major in any program in the School of Science, Joint School Programs (BIBU and MAEC), and Interdisciplinary Programs.

### Applicants with International Qualifications:

In addition to fulfilling the University's general requirements, applicants applying for:  
**Science / IRE / MAEC** program must have at least one senior level subject from **Biology / Chemistry / Mathematics / Physics**  
**BIBU** program must have at least one senior level subject from **Biology / Chemistry / Mathematics**

Application & Admission Details: <http://join.ust.hk>

## Scholarships

The University and the School of Science offer a number of scholarships to award students for their academic and non-academic excellence both upon entry and during the course of study. In the 2017/18 academic year, over 2,200 scholarships and prizes were awarded to undergraduate students in various programs of study, with the total value awarded amounting to approximately HK\$70 million.

It is very fruitful! I have taken advantage of the many research opportunities offered by the IRE program. In the 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 at Columbia University and worked with a renowned theorist Prof. Andrew Millis on the novel superconductivity of FeSe. After returning to HKUST, I got a chance to join 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. HKUST has given me plenty of training to be a serious researcher. I also met many friends who share similar ambitions and interests as I do. IRE has created an ideal environment for me to interact with brilliant students, PhDs, professors and even prominent researchers from foreign institutes.

**Pok Man TAM, Harry**  
 PhD study in University of Pennsylvania  
 Class of 2018 graduate  
 BSc in Physics (IRE)



Coming to HKUST was the best choice I have ever made. The amazing faculties here are not only doing great sciences but also dedicated to nurturing the students. The tremendous opportunities for joining laboratories, UROP, independent study courses etc., allowed me to immerse myself in scientific research as early as a freshman. Professors, no matter in lectures or as mentors, are always very approachable and supportive and offered me invaluable guidance on my career path development. I always felt encouraged to step out my comfort zone and dare to try the impossible – this is how I became the first science student to graduate with double majors in Biochemistry and Cell Biology and Computer Science. I could never have done it in four years' time without their enormous support and encouragement. It was way more than knowledge that I learnt from my undergraduate studies, my experiences in laboratories, interdisciplinary courses and exchange in Cornell University broadened my horizons, trained my logical thinking, and prepared me for a PhD study in Johns Hopkins Medical School – something I would never have imagined without HKUST. Besides, I love the diversity of student and faculty composition that HKUST always tried to keep – it is quite hard to foresee who I would have become if I had not been surrounded by friends from all over the world. I am so thankful that they made me an open-minded person and made my four-year so enjoyable.

**Qingyang WANG**  
 PhD study in Johns Hopkins Medical School  
 Class of 2018 graduate  
 BSc in Biochemistry and Cell Biology (IRE)  
 BSc in Computer Science



Thanks to the IRE programme, I met many faculty and researchers who are devoting in scientific research and let me see that pursuing a research career in Hong Kong is actually possible. I started working in research project in year 2, where I gained hands-on experience in doing literature review, designing, conducting and evaluating the experiments. The project makes me first taste the sense of satisfactory of doing research. In my overseas research internship, I worked as a full time researcher in an organic synthesis research group in Japan. Though the experimental techniques are similar, the research culture and approach are different. My classmates who are also passionate in science supports me to keep trying when there is bottleneck in my research project. The many research opportunities and supports built my confidence in being a researcher.

**Ming Wai LIAW, Rachel**  
 MPhil study in Chemistry, Hong Kong University of Science and Technology  
 Class of 2018 graduate  
 BSc in Chemistry (IRE)





**The Hong Kong University of Science and Technology**  
Clear Water Bay, Kowloon, Hong Kong  
Tel: (852) 2358 5065  
Fax: (852) 2358 1464  
Website: [science.ust.hk](http://science.ust.hk)  
Email: [ugscience@ust.hk](mailto:ugscience@ust.hk)  
Copyright © 2018 HKUST

School of 理學院  
**Science**