



SHKU
Science

FACULTY OF SCIENCE
THE UNIVERSITY OF HONG KONG
香港大學理學院

6901 Bachelor of Science

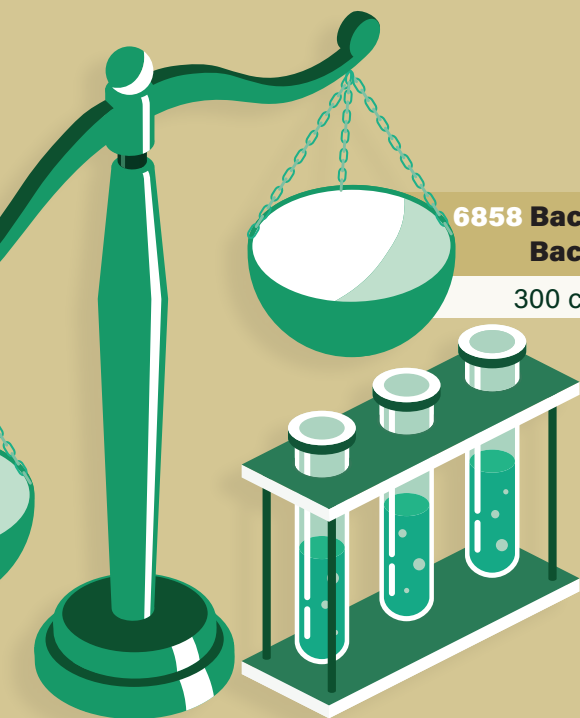
240 credit in 4 years



Science Majors

in BSc Curricula 2025-26

Your journey to a science degree starts here



6858 Bachelor of Science & Bachelor of Laws

300 credits in 5 years



6688 Bachelor of Science & Master of Research (Science Master Class)

303 credits in 4.5 years

Major / 2nd Major

- Biochemistry
- Biological Sciences
- Chemistry
- Earth System Science
- Ecology & Biodiversity
- Environmental Science
- Food & Nutritional Science
- Geology
- Mathematics
- Molecular Biology & Biotechnology
- Physics

Minor

- Astronomy
- Biochemistry
- Chemistry
- Computational & Financial Mathematics
- Earth Sciences
- Ecology & Biodiversity
- Environmental Science
- Food & Nutritional Science
- Marine Biology
- Mathematics
- Molecular Biology & Biotechnology
- Operations Research & Mathematical Programming
- Physics
- Science Entrepreneurship

BIOCHEMISTRY

Major Minor

The Biochemistry Major provides students with a thorough grounding in contemporary biochemistry and molecular biology. Combining core and elective courses with experiential learning, this programme equips students with the critical thinking, analytical skills, and practical experience needed to excel in scientific and medical fields.

Studying Biochemistry

This Major is designed to provide students with both basic and advanced knowledge in modern biochemistry and molecular biology. Our goal is to develop and equip students with enough critical thinking and analytical skills so that they can embark on a career in biochemical sciences.

Major Highlights

- Core courses in the curriculum emphasise equipping students with a general understanding of the fundamental ideas, principles and theories of biochemistry
- Elective courses extend this core knowledge to provide students with specialised insight into both basic and applied scientific endeavour in
 - ◊ Biochemistry
 - ◊ Bioinformatics
 - ◊ Molecular medicine
 - ◊ Molecular genetics
- Throughout the curriculum, there is an emphasis on experiential learning through laboratory practicals, problem-solving exercises, group-based learning, industrial experience, overseas exchange and research-based projects.

Curriculum

Major in Biochemistry (96 credits)

- Offers students a comprehensive degree-level education in biochemistry, catering to careers in the science, health, and education sectors, as well as research opportunities in biomedicine.

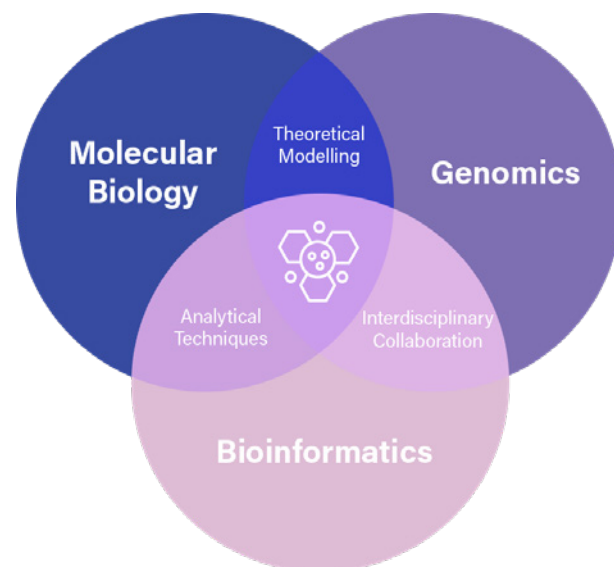
Hear from Our Student

'Seeing is Believing. This Major allowed me to appreciate the fine details of biomolecules and their reactions. It is also a rewarding journey of experiencing biomedical innovation through guided practical sessions. The diversity of this Major, bridging biochemistry to genetics to data analysis and management, broadened my horizons. The scope of the courses, together with well-designed laboratory practicals, fully integrated and deepened my understanding of biochemistry and its applications. I also acquired sufficient programming skills and statistical knowledge for bioinformatics analysis, which is absolutely beneficial for my future research career.'



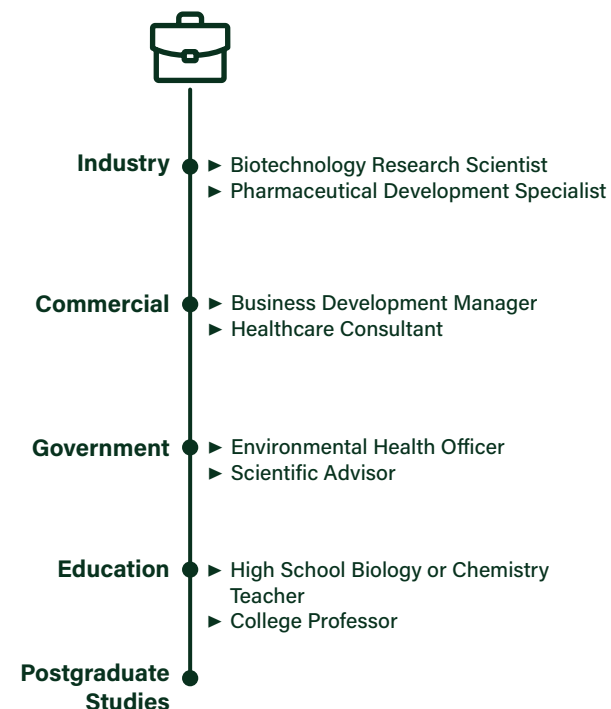
Ka Hin CHEUNG

BSc graduate (major in Biochemistry)
Participant of Research Colloquium for Science
Undergraduate Students
HKU Rugby Club Chairperson and Men's team Captain



Career Prospects

Over half of our Biochemistry graduates have entered the commercial world and become business professionals, while approximately a third have found employment in occupations related to science, biotechnology and healthcare. Some of our graduates are employed in the education sector, or have become scientific personnel in hospitals and tertiary institutions. A small group of graduates have joined the Civil Services. Each year, a significant number of students take up postgraduate studies and pursue a career in advanced scientific and medical research.



BIOLOGICAL SCIENCES

Major Major (Intensive)

From the smallest cells to entire ecosystems, Biological Sciences explore the complexity of life, the biological processes of living organisms and their interactions with the environment. It is an essential field that contributes to advancements in various areas, such as medicine, biotechnology, genetics, and ecology.

Studying Biological Sciences

This Major is designed for students seeking a broad-based training in modern biology. Students are guided in an inquiry-driven learning environment to appreciate the major biological systems at different levels of biological organisation.

Major Highlights

- Teaching emphasises both core concepts and applied aspects in biological sciences
- Senior students are further exposed to and will undertake experiential learning activities in three fundamental areas:
 - ◊ Genetics, molecular and cell biology
 - ◊ Ecology, systematics and evolution
 - ◊ Physiology and organismic biology

Curricula

To cater for students' different needs, two curricula in Biological Sciences are offered:

Major in Biological Sciences (96 credits)

- Provides students with the opportunity to expand their knowledge in other disciplines

Major in Biological Sciences (Intensive) (144 credits)

- For students with a strong desire to acquire knowledge with sufficient depth and breadth in the field
- **Accreditation:** The Intensive Major has been accredited by the *Royal Society of Biology (RSB)*, UK



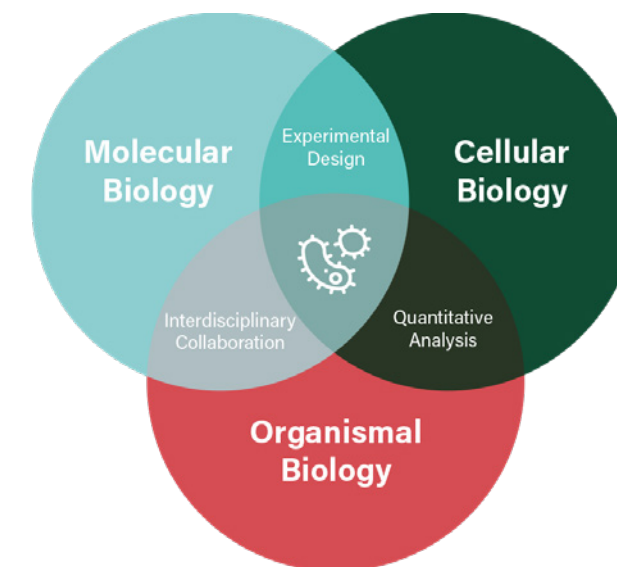
Hear from Our Student

'Majoring in Biological Sciences at HKU has played an essential role in my future development. I have gained a deep understanding of the biological world through rigorous theoretical courses with interesting hands-on lab and field trips. In addition, the Summer Research Fellowship offered by HKU has provided me with invaluable opportunities to engage in research with excellent professors and meet many like-minded people. These have laid a solid foundation for my future academic career.'



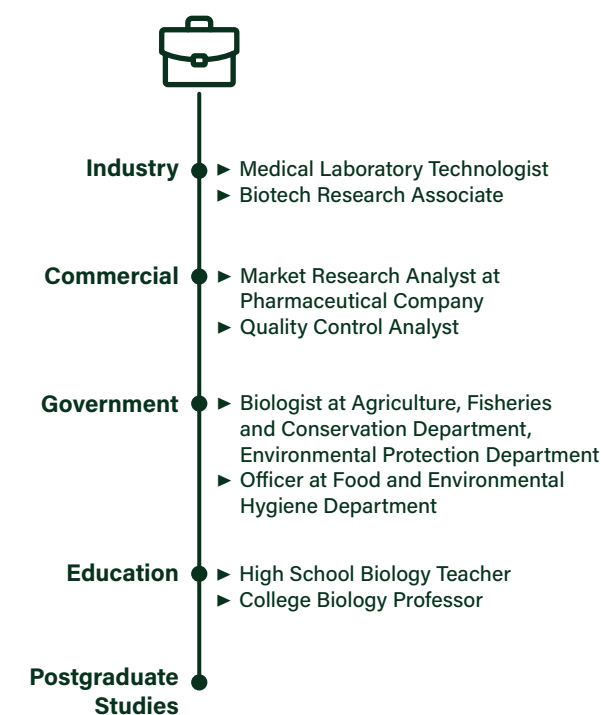
Yumeng WEI

BSc student (major in Biological Sciences (Intensive))



Career Prospects

Our Biological Sciences graduates possess a strong foundation in the principles and practical skills of the field. The transferable skills they acquire through theoretical and experimental investigations can be applied to a variety of career paths, including research and development, healthcare, environmental conservation, education, and more.



CHEMISTRY

Major Major (Intensive) Minor

Chemistry is the fundamental scientific discipline that examines the nature of matter and its ever-evolving transformations. It serves as a catalyst for advancements in various fields, such as materials science, pharmaceutical development, sensor technology, and alternative energy exploration.

Studying Chemistry

By pursuing Chemistry, you will not only acquire in-depth knowledge of the subject matter, but also hone a wide range of valuable skills, including numerical and analytical proficiency, research acumen, and the ability to solve complex problems.

Major Highlights

- Solid training in major areas of chemistry
- Core courses covering physical, inorganic, organic, and analytical chemistry
- Wide selection of electives in interdisciplinary areas, including:
 - ◊ Chemical biology, computational chemistry, environmental chemistry, interfacial science, materials chemistry, and medicinal chemistry

Curricula

To cater for students' different needs, two curricula in Chemistry are offered:

Major in Chemistry (96 credits)

- Allows students to broaden their education in other areas

Major in Chemistry (Intensive) (144 credits)

- For students who wish to specialise in chemistry

- **Accreditation:** The Intensive Major has been accredited by the Royal Society of Chemistry (RSC), UK



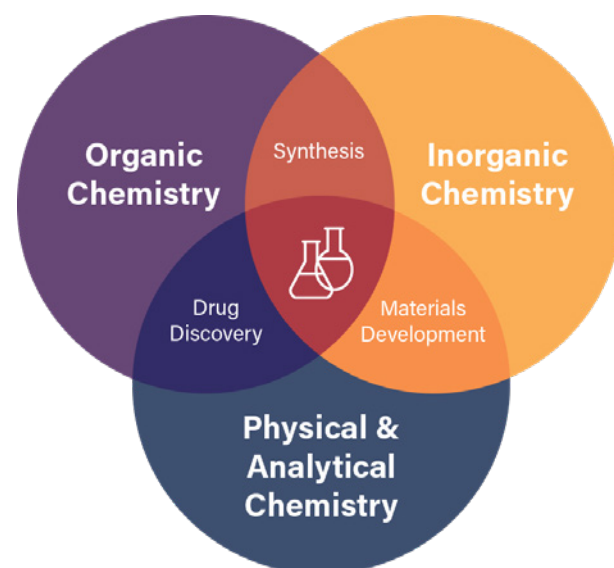
Hear from Our Student

'HKU Chemistry ignited my passion and honed my analytical skills through rigorous training and diverse research opportunities. This has provided me with a strong foundation in chemistry that is currently propelling my achievements in my professional journey.'



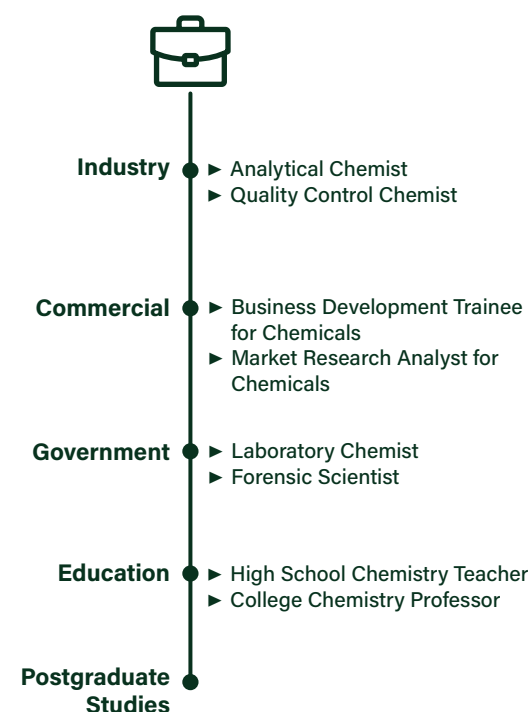
Pak Shing Billy POON

BSc graduate (Major in Chemistry (Intensive))
Patent Attorney Trainee – GRST Holdings Limited



Career Prospects

Our graduates are proficient in the principles and experimental skills of chemistry, and are well-versed in the current development of chemical sciences. The transferable skills acquired through theoretical and experimental investigations in sciences can be easily applied to many aspects of life.



EARTH SYSTEM SCIENCE

Major

Earth System Science encompasses the diverse interactions among the planet's solid, liquid, and gaseous components. This essential field involves the study of the nature and evolution of our planet, enabling a greater understanding of pressing issues like climate change, natural resource management, and natural hazard mitigation.

Studying Earth System Science

This Major offers students a comprehensive understanding of the complex interactions among the planet's multifaceted components. Through an experiential learning environment, students cultivate critical thinking, effective communication, and problem-solving, equipping them to address pressing global concerns such as natural resource management and hazard mitigation.

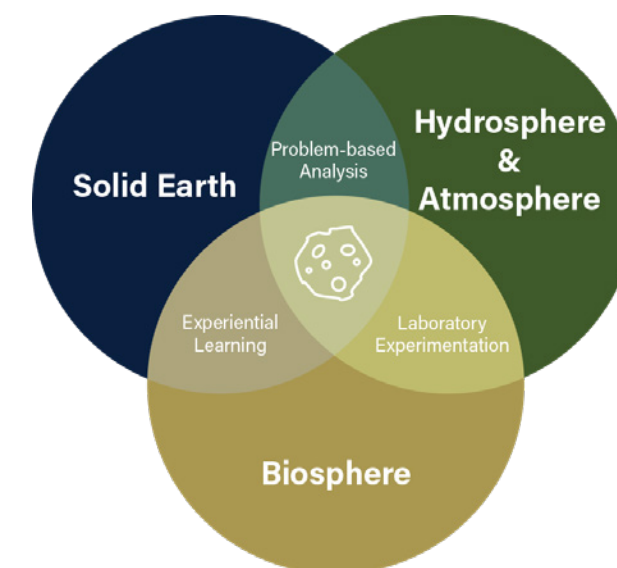
Major Highlights

- Core courses focus on understanding the Earth's internal and external systems and their intertwinements in time and space and human impacts
- Diverse array of topics covered:
 - ◊ Biogeochemical cycles, climatic systems, ocean-atmosphere interaction, hydrosphere, weathering processes, and the sustainable development of mankind

Curriculum

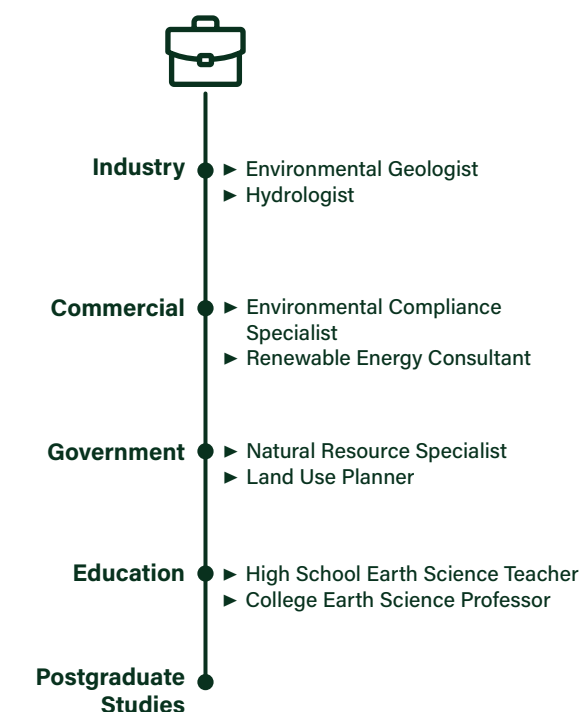
Major in Earth System Science (96 credits)

- Fosters diversification of students' educational pursuits, enabling them to explore additional fields that align with their career objectives



Career Prospects

Earth System Science graduates have a deep understanding of the planet's interactions and are skilled in addressing global issues. The expertise opens doors to careers in resource management, hazard mitigation, green industries, and education. They are well-positioned for success in various sectors, leveraging their transferable skills acquired through experiential learning.



Hear from Our Student

'One of the highlights of my studies was a series of overseas field trips, where I embarked on journeys to remote places. Scientific knowledge was not the only asset I gained from my studies, as the Earth System Science Major provided me with a holistic experience.'



Chi Hang HUI

BSc graduate (major in Earth System Science)

ECOLOGY & BIODIVERSITY

Major Major (Intensive) Minor

Ecology & Biodiversity encompasses the intricate relationships between organisms and their environments, the diversity of species across the globe, and the critical challenges and strategies for conserving biodiversity. By unravelling complex ecosystem interactions, it supports sustainable stewardship and contributes to our planet's health and balance.

Studying Ecology & Biodiversity

By studying ecological processes, biodiversity patterns, and sustainable management strategies, students will acquire various skills, including critical reasoning, quantitative analysis, and the ability to collaborate across disciplines. The knowledge and expertise gained in this Major enable students to address and mitigate environmental challenges effectively.

Major Highlights

- Core courses covering three key areas, with special reference to Hong Kong and Asian aquatic and terrestrial flora and fauna:
 - ◊ Evolution and diversity of life forms on Earth and their habitual diversity
 - ◊ Interactions of organisms with each other and their environments
 - ◊ Threats and approaches for biodiversity conservation and sustainable management
- Senior students are further exposed to applied or specialised topics of different ecosystems via fieldwork experience and the use of quantitative and experimental methods

Curricula

To cater for students' different needs, two curricula in Ecology & Biodiversity are offered:

Major in Ecology & Biodiversity (96 credits)

- Allows students to explore a multitude of subjects, fostering their growth in both academic and professional areas

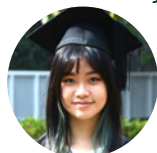
Major in Ecology & Biodiversity (Intensive) (144 credits)

- Provides thorough training for students with a strong interest in the field and aiming for specialised careers
- **Accreditation:** The Intensive Major has been accredited by the *Royal Society of Biology (RSB)*, UK



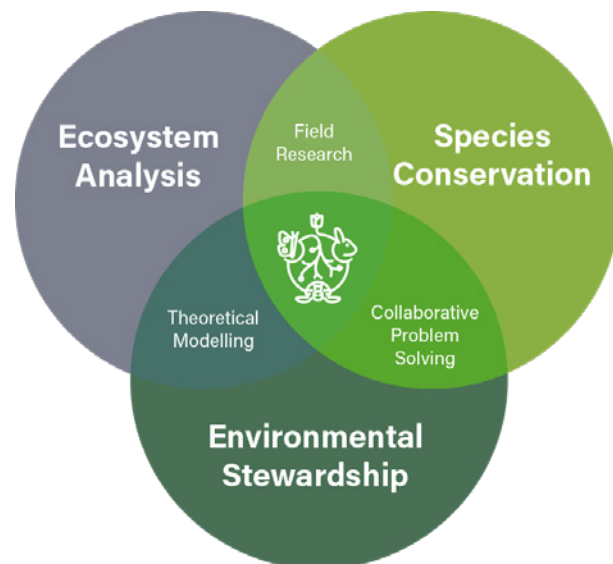
Hear from Our Student

'My undergraduate experience in Ecology and Biodiversity opened my eyes to the mechanisms of nature and ecosystems, which has made me feel much more in touch with Hong Kong as a city and the world as a whole. More importantly, learning about ecological theories in class and having the opportunity to apply different cutting-edge research methods in the lab helped me discover my passion for research and set my career path.'



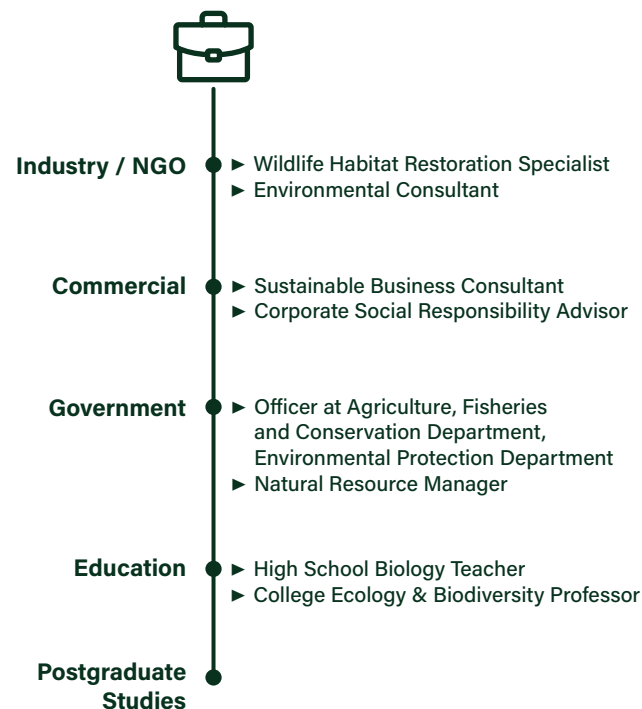
Portia Yeuk Hang WONG

BSc graduate (major in Ecology & Biodiversity)



Career Prospects

As the urgency to safeguard the natural environment and biological resources intensifies, Ecology & Biodiversity graduates take on a vital role in shaping policy formulation, decision-making processes, and finding innovative solutions to environmental issues. The versatility of their acquired knowledge and skills enables them to excel in various career paths, including education, research, and conservation, among others.



ENVIRONMENTAL SCIENCE

Major Minor

Environmental Science is an interdisciplinary field that combines various scientific disciplines to address complex environmental challenges. It offers a comprehensive perspective on pressing environmental issues and equips individuals with the expertise to develop effective solutions, contributing to a more sustainable future for the planet.

Studying Environmental Science

This interdisciplinary Major emphasises fundamental environmental knowledge and provides students with a solid scientific background and an understanding of the processes that sustain life on Earth. Students are guided to explore environmental issues from both a science and management perspective, with an opportunity to engage in hands-on research and delve into sustainability concepts.

Major Highlights

- Flexible programme design comprising experiential learning of independent research, field trips and allowing exploration of various environmental issues, such as physical and sustainable environment, pollution, monitoring and management
- Students following the accredited pathway will gain expertise in
 - ◊ Environmental science
 - ◊ Environmental management
 - ◊ Environmental impact assessment
 - ◊ Sustainability

Curriculum

Major in Environmental Science (96 credits)

- Supports students in broadening their knowledge across different fields
- **Accreditation:** The Major has been accredited by the *Hong Kong Institute of Qualified Environmental Professionals (HKIQEP)*



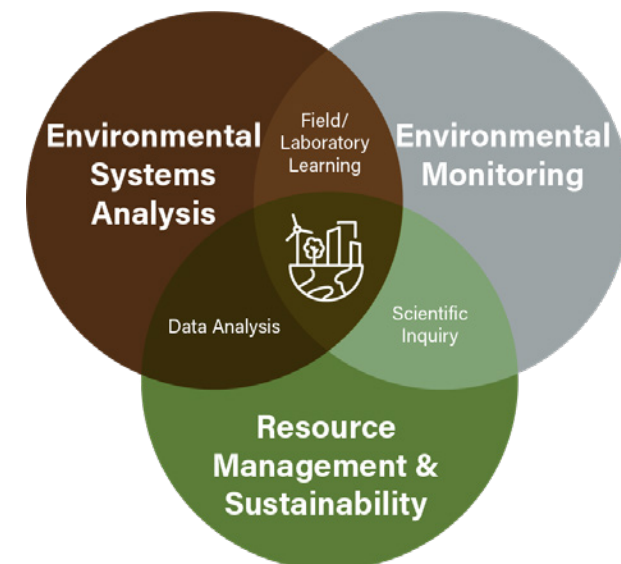
Hear from Our Student

'Studying Environmental Science has allowed me to explore the beauty of our planet. The Major's flexibility has enabled me to choose from a variety of courses, tailoring my studies to my interests. In addition to lectures, my knowledge and skills have been strengthened through field trips, labs, and projects. During my capstone, I had the opportunity to participate in a local research project that focused on stream conservation, allowing me to make a positive impact in the real world.'



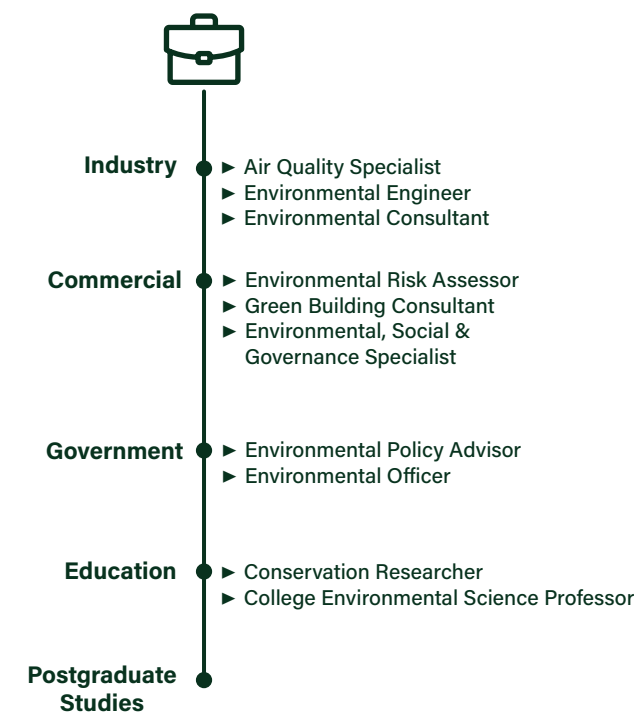
Shuk Kwan CHEUNG

BSc graduate (double major in Environmental Science and Molecular Biology & Biotechnology)



Career Prospects

Environmental Science graduates excel in addressing global environmental and sustainability challenges. Their expertise is sought-after in areas like ESG evaluation, consultancy, resources management, conservation, and education. Their transferable skills make them valuable assets across various sectors, primed for leadership roles.



FOOD & NUTRITIONAL SCIENCE

Major Minor

Food & Nutritional Science is a vital field studying food and its impact on human health and well-being. Bridging science and society, it explores interactions between food, nutrition, health, and the environment. Contributing to advancements in public health, food technology, and sustainability, this field offers a dynamic platform for addressing global challenges and shaping our food and health future.

Studying Food & Nutritional Science

This Major offers students an understanding of theoretical and practical aspects of food science, technology, and nutrition concerning human health, as well as the connection between food and various factors. Students will cultivate transferable skills such as experimental design, interdisciplinary collaboration, analytical thinking, and problem-solving for addressing complex issues.

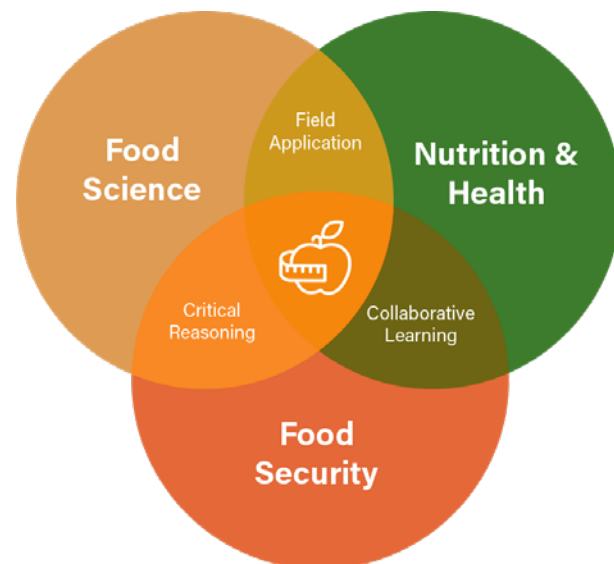
Major Highlights

- A progressive programme delving into a wide array of disciplines, including:
 - ◊ Genetics, sustainability, security, chemistry, microbiology, safety, product development, commodities, toxicology, nutraceuticals, physiology, diet, nutrition, public health, etc.
- A curriculum meeting the requirements for higher degree in MPhil and PhD and or the taught Master of Science degrees in the fields of:
 - ◊ Food industry: Management and Marketing
 - ◊ Food Safety and Toxicology

Curriculum

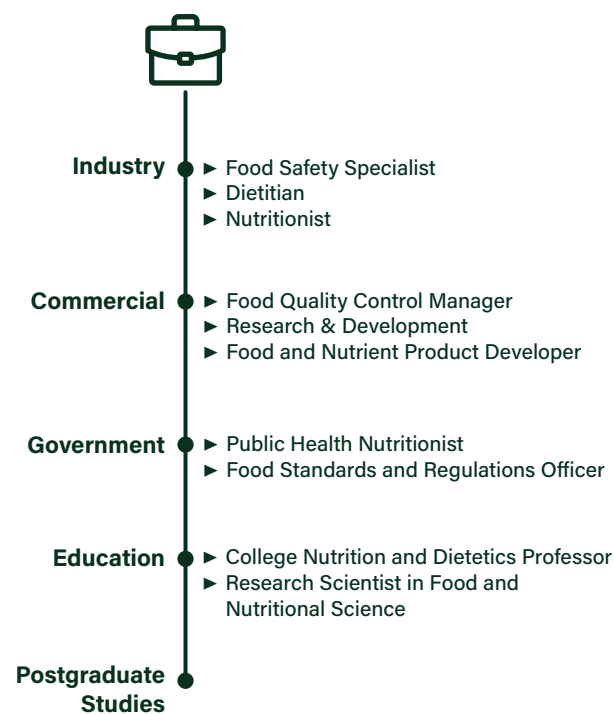
Major in Food & Nutritional Science (96 credits)

- Bestows students with the liberty to study other disciplines, enriching their educational experience



Career Prospects

Our graduates capitalise on Hong Kong's robust food industry, securing positions in local and multinational organisations, government departments, and laboratories. They excel as nutritionists, quality assurance officers, and research and development officers. Furthermore, pursuing advanced degrees enables these graduates to attain professional dietitian status.



Hear from Our Student

'The Food & Nutritional Science Major has provided me with holistic learning experiences. Besides, from the basics of food science at junior level courses to the practical nutritional needs within the population at advanced level courses, they guided me to explore thoroughly the field of public health nutrition. It also provided me with plenty of hands-on experiences, ranging from laboratory sessions that investigate the effect of nutrition on our health to food making and quality testing. Moreover, this Major has enhanced my critical thinking, communication skills and ability to collaborate as a team, which is essential in the workplace.'



Sum Yuet CHENG

BSc graduate (major in Food and Nutritional Science)

GEOLOGY

Major Major (Intensive)

Geology, anchored in the study of Earth's structure, materials, processes and history, is critical to navigating our dynamic planet. Its reach spans from modelling environmental transformations to natural resource management and hazard mitigation. Geologists harness this knowledge to refine our understanding of Earth's processes, aiming to enhance human life quality.

Studying Geology

The Major provides students with a solid foundation in geological sciences, enabling the development of analytical and technical skills in fieldwork and research, such as the capability to produce professional-level geological maps and reports. Through participation in overseas field camps, students gain practical experience and broaden their understanding of global geological contexts.

Major Highlights

- Comprehensive core curriculum encompassing key geoscience subdisciplines, including:
 - ◊ Mineralogy, petrology, sedimentology, geochemistry, geophysics, structural geology, plate tectonics, etc.
- Elective courses in specialised areas such as:
 - ◊ Mineral resources, hydrogeology, and engineering geology
- Practical experience through fieldwork, with opportunities to attend 3-4 overseas field camps

Curricula

To cater for students' different needs, two curricula in Geology are offered:

Major in Geology (96 credits)

- Nurtures their abilities and interests through diverse educational opportunities

Major in Geology (Intensive) (144 credits)

- Offers extensive training in the field for students aspiring to advanced studies or specialised careers

- **Accreditation:** The Intensive Major (Accredited Pathway) is accredited by the *Geological Society of London, UK*



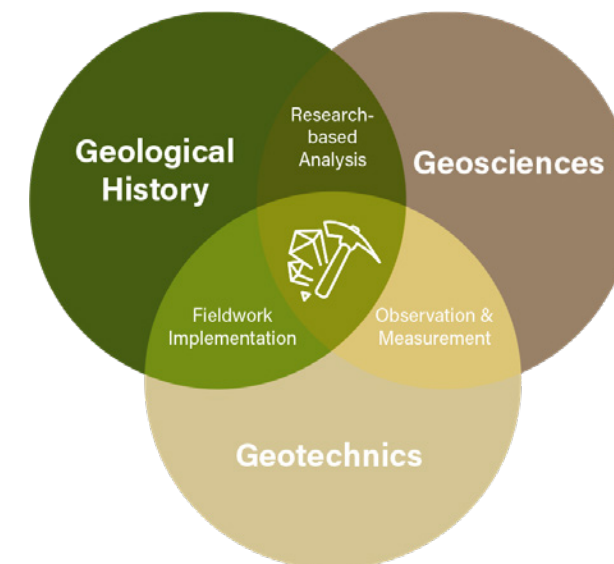
Hear from Our Student

'The well-structured curriculum at HKU allows me to explore our planet progressively by examining rocks, minerals, magma, water, fossils and many more. Participating in field trips, including both in Hong Kong and overseas, I have gained a regional view of how geology has been shaping the Earth and experienced how geologists collect first-hand data in the field. The intensive Geology Major also provides me with in-depth and all-rounded knowledge, which I can apply to my supervised research project.'



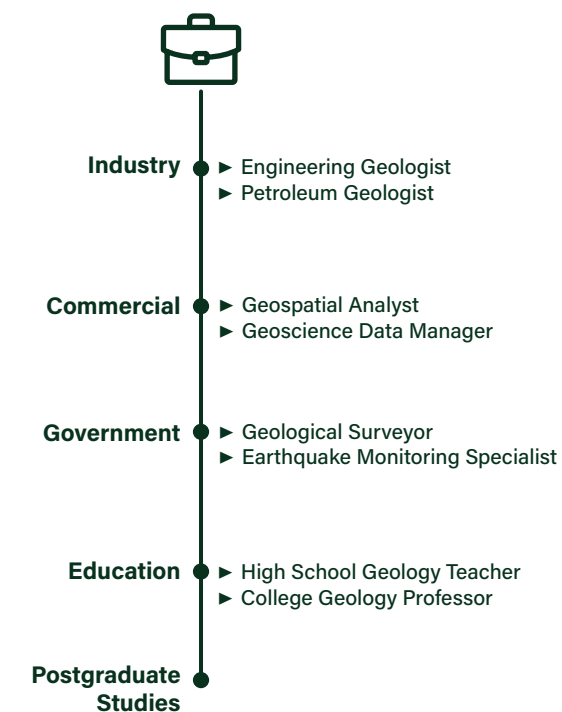
Ho Lam SHEK

BSc graduate (major in Geology (Intensive))



Career Prospects

Graduates of the Geology Major possess a strong foundation in geological principles and practical skills, with diverse career prospects in infrastructure development, natural hazard management, and resource industries. The demand for geologists remains high due to large-scale construction projects and the need for better environmental management.



MATHEMATICS

Major Major (Intensive) Minor

Mathematics is a universal language that underpins many aspects of life, encapsulating the precision and logic found in nature and the universe. It is a fundamental discipline that cultivates quantitative reasoning, problem-solving abilities, and analytical thinking. Mathematics forms the core of numerous scientific fields, driving innovation in sectors such as technology, finance, logistics, and education.

Studying Mathematics

Studying Mathematics provides students with a comprehensive understanding of the subject, encompassing both fundamental concepts and diverse specialisations. Through this Major, students will cultivate valuable skills such as quantitative reasoning, analytical and critical thinking, problem-solving, and the ability to tackle novel situations and ill-defined problems.

Major Highlights

- Core courses in the curriculum emphasise fundamental knowledge and concepts in Mathematics, and elective courses provide training in both pure and applied aspects of Mathematics
- Consistent emphasis on experiential learning through guided studies, projects, seminars and summer internships

Curricula

To cater for students' different needs, two curricula in Mathematics are offered:

Major in Mathematics (96 credits)

- Provides students with the flexibility to design a personalised curriculum which promotes intellectual curiosity

Major in Mathematics (Intensive) (144 credits)

- Offers students a drive to achieve proficiency and comprehensive knowledge in the field

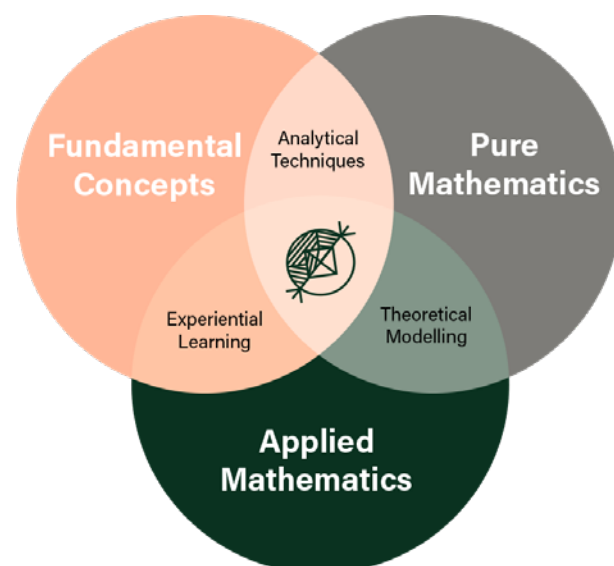
Hear from Our Student

'At the time of entering HKU, I had no intention of exploring the obscure language of pure mathematics, nor had I anticipated pursuing a PhD degree after graduation, for at that time, my mathematics ability was quite mediocre among my peers. I owe such profound transformation and my deepest thanks to the nurturing environment of the Department of Mathematics and to the professors who had been helpful and patient to a curious, ambitious, yet sometimes silly undergraduate student.'



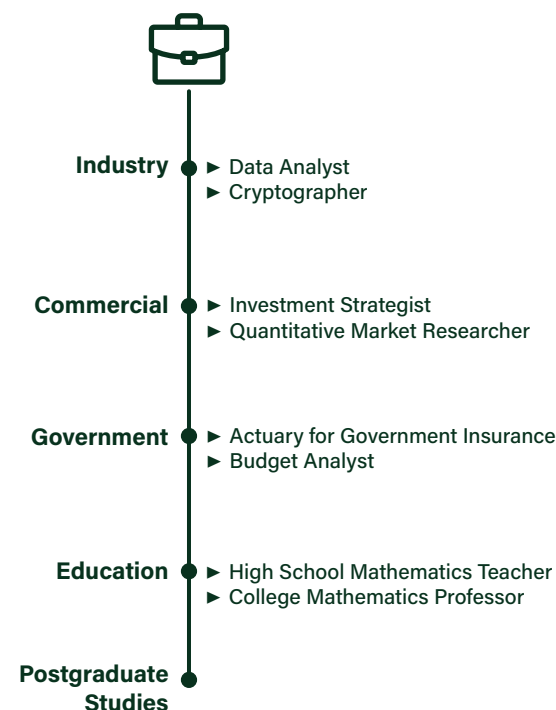
Xun TANG

BSc graduate (major in Mathematics (Intensive))
Participant of the Undergraduate Research Fellowship Programme at the University of California, Berkeley
PhD student at Stanford University ICME



Career Prospects

Our Mathematics graduates are equipped with versatile skills that open the door to various sectors, including commerce, information technology, public organisations, and education. Many graduates also pursue further studies, showcasing the breadth of opportunities available with a solid foundation in Mathematics.



MOLECULAR BIOLOGY & BIOTECHNOLOGY

Major Major (Intensive) Minor

Molecular Biology & Biotechnology has emerged as cornerstones of 21st-century science, solving critical challenges and enabling transformative real-world applications. This dynamic programme immerses students in the cutting-edge frontier, cultivating expertise to drive scientific progress and harness the immense potential of these transformative fields.

Studying Molecular Biology & Biotechnology

This Major is designed for students seeking specialised training in molecular and cell biology with a focus on industrial and medical applications. Students will be guided to further develop various essential skills in molecular biology and biotechnology through hands-on laboratory training and experimental-based projects.

Major Highlights

- The programme covers a diverse range of cutting-edge Molecular Biology & Biotechnology applications, including:
 - ◊ Bioactive substances
 - ◊ Genetic engineering for agriculture and aquaculture
 - ◊ Biomedical research and pharmaceuticals
 - ◊ Biofuels, bioremediation, and wastewater treatment
- A feature of this Major is to provide key transferable skills by engaging students in inquiry, critical thinking, and problem-solving in their learning

Curricula

To cater for students' different needs, two curricula in Molecular Biology & Biotechnology are offered:

Major in Molecular Biology & Biotechnology (96 credits)

- Provides students with the opportunity to expand their knowledge in other disciplines

Major in Molecular Biology & Biotechnology (Intensive) (144 credits)

- For students with a strong desire to acquire knowledge with sufficient depth and breadth in the field
- **Accreditation:** The Intensive Major (Accredited Pathway) is accredited by the *Royal Society of Biology (RSB)*, UK



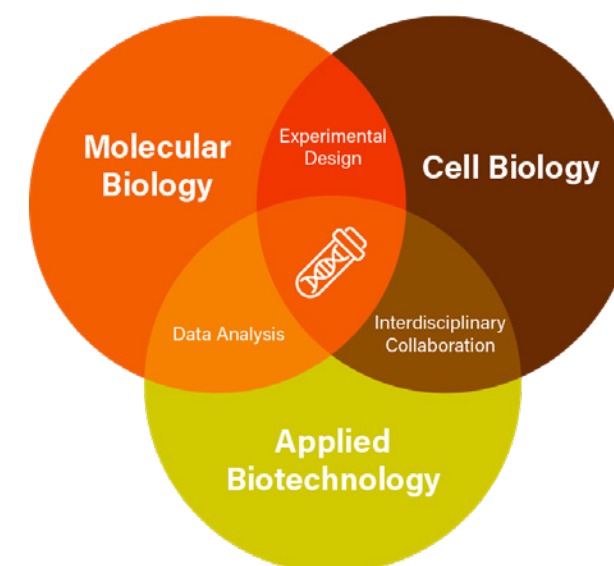
Hear from Our Student

'This Major offers specialised training in state-of-the-art molecular and cell biology and in the translation of basic knowledge into modern industrial and medical applications. I was given research opportunities to work in the animal lab, where stationed veterinarians were responsible for ensuring that animal welfare and practices were up to standard for good science to be conducted. It made me aware of the broad range of roles that a veterinary surgeon could take and made this career path more appealing.'



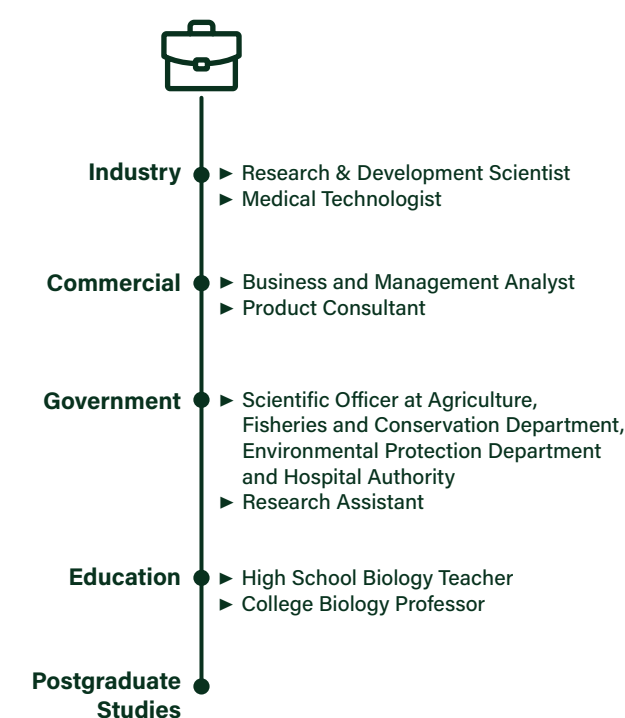
Jason WONG

BSc graduate (major in Biological Sciences)
Student in the Doctor of Veterinary Medicine (DVM) at the University of Melbourne, Australia



Career Prospects

Our Molecular Biology & Biotechnology graduates pursue diverse career paths, from government departments and the commercial biotechnology and pharmaceutical sector to research facilities and advanced graduate studies in specialised areas of the field.



PHYSICS

Major < Major (Intensive) < Minor

Physics is a critical branch of science that studies the fundamental laws and principles that dictate the behaviour of matter and energy. From developing new technologies to understanding the motion of celestial bodies, it plays a crucial role in advancements in fields like engineering, electronics, astrophysics, and renewable energy, enabling us to understand and manipulate the physical world around us.

Studying Physics

A background in physics is invaluable for comprehensively understanding the functioning of emerging technologies and facilitating its optimal utilisation. Extensive research has consistently demonstrated the immense significance of physics education across numerous professional domains. This is primarily attributed to the fact that physics education cultivates the growth of transferable skills that have widespread applicability in a diverse range of career paths.

Major Highlights

- ▶ Physics curricula are comprehensive and condensed
- ▶ Students can find courses that cover small scale particle physics to large scale cosmology
- ▶ The subject matter is intriguing and diverse, offering a range of topics to explore:
 - ◊ Disciplinary core: quantum mechanics, statistical mechanics, classical mechanics, electrodynamics, etc.
 - ◊ Disciplinary electives: astrophysics, computational physics, experimental physics, theoretical physics, etc.

Curricula

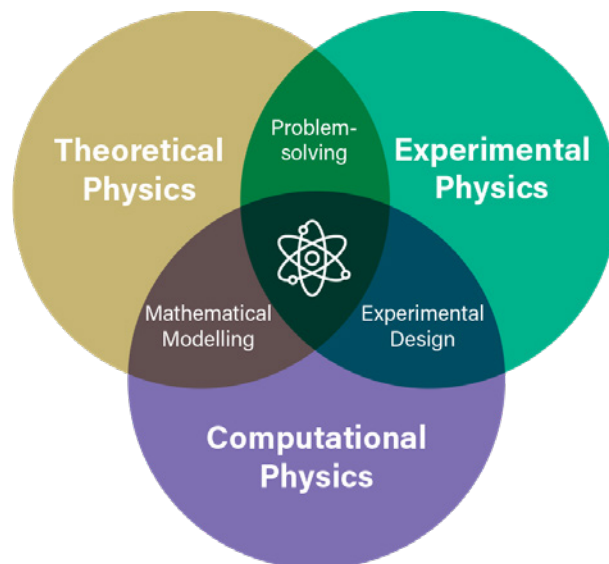
To cater for students' different needs, two curricula in Physics are offered:

Major in Physics (96 credits)

- ▶ Provides flexibility for students to pursue their academic and professional interests, abilities, and career aspiration

Major in Physics (Intensive) (144 credits)

- ▶ Provides comprehensive physics training for students pursuing further studies and specialised careers in science and technology



Career Prospects

Physics graduates possess both professional scientific qualifications and a broad range of transferable skills, including problem-solving, technical writing, creative thinking, research methodology, IT application, and analytical thinking. Such skills are highly sought after in many employment domains, particularly those that are technology-based, and not limited to scientific roles in industry or government laboratories.

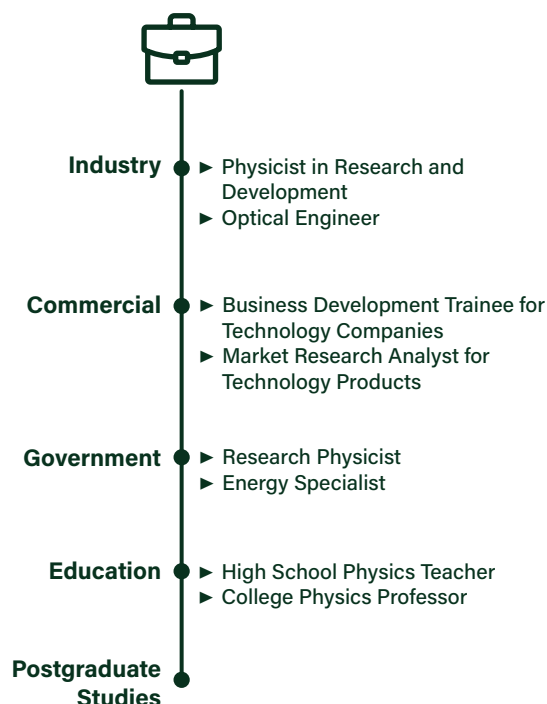
Hear from Our Student

'HKU's rigorous curriculum and diverse hands-on research opportunities prepared me exceptionally well for my subsequent academic endeavours. The welcoming environment created by the faculty has been incredibly supportive of students pursuing new ideas. I am truly grateful for the encouraging Faculty and the vibrant academic community that inspired and challenged me every step of the way.'



Hong Tsun Thomas WONG

BSc graduate (double major in Physics and Astronomy)
Master of Philosophy in Physics
PhD student in Physics at UC San Diego



HKU Science
Curricula



Admissions
Requirements



HKU
Admissions



www.scifac.hku.hk/

3917 2683

sci.ug.admission@hku.hk

HKU Science

