



Faculty of  
Applied Science & Textiles  
應用科學及紡織學院  
Programme Guide 2022 / 23

Striving for excellence  
in teaching and research  
Extending the frontiers  
of knowledge



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學



Faculty of  
Applied Science & Textiles  
應用科學及紡織學院

“ The Faculty of Applied Science and Textiles (FAST) offers a comprehensive range of academic programmes, covering Undergraduate and Postgraduate Degrees. We promote a vibrant and dynamic teaching and learning environment. Our excellence in research underpins the teaching and supports the knowledge transfer with impact to the society. ”

**Dean** Prof. Wai-yeung Wong, Raymond  
黃維揚教授

Clarea Au Professor in Energy  
Chair Professor of Chemical Technology  
President (Hong Kong Chemical Society)  
*BSc, PhD, CChem, FRSC*

**Associate Deans** Prof. Kin-wing Kwok  
郭建榮教授

*BSc, MPhil, PhD*

Prof. Man-sau Wong  
黃文秀教授

*BSc, PhD*

Dr Yiu-wan Yip, Joanne  
葉曉雲博士

*BSc, PhD*

**Assistant Dean** Dr Yang Chai  
柴揚博士

*BSc, MSc, PhD*

## Our Departments



DEPARTMENT OF  
APPLIED BIOLOGY AND  
CHEMICAL TECHNOLOGY  
應用生物及化學科技學系



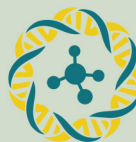
DEPARTMENT OF APPLIED MATHEMATICS  
應用數學系



Department of Applied Physics  
應用物理學系



INSTITUTE OF TEXTILES & CLOTHING  
紡織及服裝學系



DEPARTMENT OF  
APPLIED BIOLOGY AND  
CHEMICAL TECHNOLOGY  
應用生物及化學科技學系

## About the Department

The Department of Applied Biology and Chemical Technology (ABCT) is a multi-disciplinary department that embraces chemistry, biology, biochemistry, biochemical engineering and food science. We focus on providing high quality education and building our strength in basic and applied research to meet the needs of the ever-changing world and contribute to the society.

## Career Prospects

ABCT programmes offer a rigorous training to equip our graduates with the skills to capture a wide range of career options in the industry, business and the public sector. Based on their choices of study, our graduates enjoy promising employment prospects in diversified fields including civil services, biotechnology industry, pharmaceutical industry, testing and certification, food and catering, environmental services and etc. Graduates may also choose to further their academic pathway and pursue postgraduate studies in local or overseas universities.

## Scheme-based Admission for Undergraduate

### BSc (Hons) Scheme in Biotechnology, Food Safety and Chemical Technology (JS3010)

#### Common Year (3 Semesters)

General Chemistry I, General Biology, General Laboratory Techniques and Safety, Basic Statistics, Introduction to Physics, Organic Chemistry, etc.

#### Major Programme (5 Semesters)

Choose a specific major programme by the end of the common year  
After successful completion of the 4-year programme, students will be awarded the degree of their selected Major Programmes

BSc (Hons) in  
Applied Biology  
with  
Biotechnology

BSc (Hons) in  
Chemical  
Technology

BSc (Hons) in  
Food Safety  
and  
Technology



# Bachelor's Degree Programmes

## **BSc (Hons) Scheme in Biotechnology, Food Safety and Chemical Technology (JS3010)**

The following three programmes are offered under the above scheme:

### **BSc (Hons) in Applied Biology with Biotechnology #**

Launched in 1993, this programme was the first biotechnology-related programme in Hong Kong. It aims to groom competent professionals with a balance of generic skills and broad-based knowledge in applied biology and biotechnology. The programme is accredited by the Royal Society of Biology (RSB) and graduates are qualified for membership of RSB.

# The option of Secondary Major in Innovation and Entrepreneurship is available

### **BSc (Hons) in Chemical Technology**

Our programme emphasises the applied, technological and commercial aspects of chemistry, and offers a broad and rigorous education in contemporary chemistry and training in laboratory practices. The graduates of this programme are qualified for membership of the Hong Kong Chemical Society (HKCS) and the Royal Society of Chemistry (RSC).

### **BSc (Hons) in Food Safety and Technology**

This programme is designed to meet the international undergraduate degree standards of the Institute of Food Technologists (IFT) and the International Union of Food Science and Technology (IUFoST). We emphasize the professional, intellectual and all-round abilities of students to meet the needs of the food industry.

## **BSc (Hons) in Analytical Sciences for Testing and Certification (12456)**

*(Articulation Programme for Local Senior Year Admissions)*

Designed for holders of Associate Degree/ Higher Diploma in science disciplines, this articulation programme aims to produce competent professionals for chemical analysis as well as accreditation officers, which are currently in strong demand in the local testing and certification industry.

# Master's Degree Programmes

After obtaining a Bachelor's Degree, graduates can continue to strive for further study in our Master's Degree Programmes

### **MSc in Global Food Safety Management and Risk Analysis (12057), Mixed-mode**

This programme aims to provide a unique and professional oriented training on global food safety management and risk analysis for food science/technology graduates, as well as to provide students with advanced knowledge in the hazards affecting food safety from a global perspective.

### **MSc in Nutrition and Healthy Ageing (12058), Mixed-mode**

This programme produces well-trained nutritionists for the needs and benefits of the community, especially for the elderly service. It provides a deeper insight to students to promote health education in Hong Kong, while taking up the responsibility to promote human health towards optimal nutritional status and disease prevention.

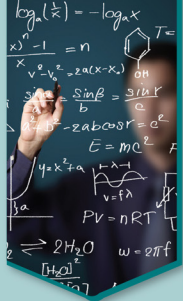


## Enquiry

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**W** <https://www.polyu.edu.hk/abct>





DEPARTMENT OF APPLIED MATHEMATICS

應用數學系

## About the Department

**The Department of Applied Mathematics (AMA)** offers a broad range of academic programmes and a wide breadth of exciting research disciplines. We facilitate learning through excellent teaching and research in Applied Mathematics with leading expertise in optimisation, optimal control, computational mathematics, applied statistics and actuarial science, data science, financial mathematics and engineering mathematics. In the QS World University Ranking 2021, PolyU is listed the world top 100 in Statistics and Operational Research and 106<sup>th</sup> in Mathematics.

## Career Prospects

Our academic programmes are designed to cultivate students' analytical, critical thinking, problem-solving and communications skills, enabling them to develop an outlook and methodology that remain valuable in pursuing a variety of careers such as telecoms, information technology, market research, manufacturing, pharmaceuticals, investment banking, fund management, risk management, and financial product development and pricing. Many of our graduates have secured employment in prestigious financial institutions and renowned corporations throughout the Asia Pacific, while some of them pursue further studies in top-notch universities.

## Scheme-based Admission for Undergraduate

### BSc (Hons) Scheme in Data Science (JS3020)

#### Common Year (2 Semesters)

Calculus, Multivariable Calculus, Linear Algebra, Probability & Distributions, Programming Fundamentals, Introduction to Statistics, Database System, Operations Research Methods, etc.

#### Major Programme (6 Semesters)

Choose a specific major programme by the end of the common year  
After successful completion of the 4-year programme, students will be awarded the degree of their selected Major Programmes

BSc (Hons) in  
Data Science  
and  
Analytics

BSc (Hons) in  
Investment Science  
and  
Finance Analytics



# Bachelor's Degree Programmes

## BSc (Hons) Scheme in Data Science (JS3020)

The following two programmes are offered under the above scheme:

### BSc (Hons) in Data Science and Analytics #

This programme aims to groom graduates with expertise that combines core disciplines of Data Science and Computer Science. Students will be able to communicate findings from data analysis and their implications, and to apply them effectively to a wide range of industries e.g. finance, telecoms, IT and pharmaceuticals.

# The option of Secondary Major in Innovation and Entrepreneurship is available

### BSc (Hons) in Investment Science and Finance Analytics ^

The programme embraces core disciplines of mathematics, statistics, finance and computer sciences. It aims to develop students' ability in financial data analytics, critical thinking, and communication skills, which will strengthen their data interpretation skill and support them in developing career in the evolved investment and finance industries.

^ The option of Secondary Major in Artificial Intelligence and Data Analytics is available

# Master's Degree Programmes

After obtaining a Bachelor's Degree, graduates can continue to strive for further study in our Master's Degree Programmes

## MSc in Applied Mathematics for Science and Technology with two specialisms (63022)

- (i) Decision Science, Part-time
- (ii) Actuarial and Investment Science, Full-time

The curriculums of these two specialisms are well designed to cover the wide topics in statistics, insurance, financial mathematics and decision making, which are essential in the training of students with a solid foundation as professionals in insurance, investment, finance and engineering.

## MSc in Data Science and Analytics (63027), Mixed-mode

This programme aims at producing graduates with expertise that cuts across core disciplines of mathematics, statistics and computer science. It develops students' analytical and critical thinking, as well as problem-solving skills. This will enable the students to pursue careers as data analysts in various industries such as finance and information technology.

## MSc in Operational Research and Risk Analysis (63024), Mixed-mode

This programme aims to develop students' analytical, critical and communication skills which will enable them to pursue a variety of jobs related to operational research and risk analysis, in areas such as logistics service providers, retail, banking, procurement/ sourcing, supply chain functions, modern financial product development and pricing.



## Enquiry

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Department of Applied Physics  
應用物理學系

## About the Department

**The Department of Applied Physics (AP)** is devoted to educating the future leaders, nurturing them with the best resources and opportunities. Our over 30 laboratories are equipped with cutting-edge facilities for students' learning and research activities in physics, materials science and engineering. AP ranks the first amongst physics departments in local universities with the highest percentage of "world-leading" research work in the Research Assessment Exercise 2020 of the University Grants Committee.

## Career Prospects

AP graduates are serving the society in key positions and have made significant contributions to the smart city development of Hong Kong. A degree in physics opens the door to a broad range of career choices:

### Tech-related Career

Data Scientist, AI Software Engineer and System Architect,  
System Analysts, Analyst Programmer, IT Consultant

### Industry-related Career

Technology Consultant, Engineer, System Developer

### Professional Service-related Career

Medical Physicist, Lab Manager

### Postgraduate Studies

MSc, MPhil or PhD in overseas or local universities



# Bachelor's Degree Programme

## **BSc (Hons) in Physics with a Secondary Major in Artificial Intelligence and Data Analytics (AIDA) / Innovation and Entrepreneurship (IE) (JS3030)**

Students will be awarded one of the following awards upon successful completion of the graduation requirements of the programme concerned:

### **BSc (Hons) in Physics with AIDA**

With a strong emphasis on applications, students will be exposed to both fundamental and applied physics topics as well as the concepts in AI. The infusion of the two disciplines throughout the curriculum down to subject levels helps to consolidate students' learning, providing them with a competitive edge in the upcoming technology development. A diverse range of topics covered in the curriculum includes data analytics, machine learning, programming, neural networks, optical design with AI, smart sensors, and medical physics.

### **BSc (Hons) in Physics with IE**

With a highly diversified curriculum covering fundamental and applied physics, innovation and business. A major highlight of the curriculum is the extended internship training in major technology enterprises or start-ups, providing golden opportunities for nurturing future innovation leaders in Hong Kong. A diverse range of topics covered in the curriculum includes optical design, smart sensors, etc. Besides, students will learn practical business skills such as project planning and risk analysis.

## **BSc (Hons) in Engineering Physics (11439-SY)**

*(Programme for Local Senior Year Admissions)*

Engineering Physics is a unique programme that focuses on the application of physics to engineering. Students gain the ability to analyse and solve practical/ engineering problems, which prepares them for complex workplace situations and technological advances. Our graduates work in a variety of areas from education to manufacturing and service in industrial sectors, government organisations, testing and certification, medical engineering, aviation industry, software development and financial sector.



### **Enquiry**

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INSTITUTE OF TEXTILES & CLOTHING  
紡織及服裝學系

## About the Department

**The Institute of Textiles and Clothing (ITC)** is the pioneer of fashion and textiles education in Hong Kong. Since its inception in 1957, ITC has developed into a world-renowned fashion and textiles institution in education, research and technology transfer. Now it is widely regarded as a flagship of its peers in Asia. More than thirty thousand alumni are professions of the fashion and textile industry in Hong Kong, China and beyond.

## Career Prospects

Graduates who possess strong skills in fashion design, fashion business or fashion technology, have excellent career prospects. They have enormous career opportunities in the fashion and textile industries or supporting sectors such as media, advertising and promotion, marketing, and IT solution provision, for example:

- App designer
- Buyer/ merchandiser
- Creative artist
- Creative developer
- Digital designer/ editor
- Digital product technologist
- Digital strategist
- Fashion and textile designer
- Fashion retailer
- Front-end developer
- Global fashion manager
- Image stylist
- Interactive designer
- IoT/ smart product developer
- Knitwear designer
- Luxury brand manager
- Manufacturing/ production manager
- Marketing/ sales manager
- Product development manager
- Quality and colour control manager
- Social media analystist
- Social media manager
- UX developer
- Web developer

## Scheme-based Admission for Undergraduate

### BA (Hons) Scheme in Fashion & Textiles (JS3492)

#### Common Year (3 Semesters)

Introduction to Fashion Presentation, Design Studies, Fashion Marketing, Fashion Design, Techno Fashion Products etc.

#### 5 Specialisms (5 Semesters)

Based on the desired careers and academic performance, students can pursue studies in one of the following 5 specialisms

Design

Knitwear  
Design and  
Technology

Retail  
and  
Marketing

Intimate  
Apparel and  
Activewear

Technology





# Bachelor's Degree Programmes

ITC offers a comprehensive spectrum of high quality academic programmes, covering disciplines from fashion and textile design, fashion business to fashion technology, so as to meet the different needs of students and of the society.

## **BA (Hons) Scheme in Fashion and Textiles (JS3492) #^**

The general aim of the programme is to train competent professionals for the fashion business in textiles, apparel, retailing, design and related organisations. These professionals will play an active role in the development of the global fashion and textile industry in local and overseas markets. In addition to their professional competencies, the programme will also cultivate students' other essential competencies for business environment.

#^ The options of Secondary Major in Innovation and Entrepreneurship as well as Secondary Major in Artificial Intelligence and Data Analytics are available

## **BSc (Hons) in Digital Fashion (14404)**

*(Articulation Programme for Local Senior Year Admissions)*

In response to the changing consumer landscape and to fulfil the developmental needs of the fashion industry, this programme aims to impart students with solid and holistic knowledge of new emerging technologies and digital fashion, innovative marketing/ business strategies and plans. It also equips students with advanced digital skills in fashion product development, media communication and business development in the digital era.

# Master's Degree Programmes

After obtaining a Bachelor's Degree, graduates can continue to strive for further study in our Master's Degree Programmes

## **MA in Fashion and Textile Design (14097), Full-time**

We aim to produce creative, forward-thinking designers who will develop their personal design identity, bringing a new perspective to fashion through design conceptualization, creative application and decision making skills.

## **MA in Fashion and Textiles with two specialisms (14102), Mixed-mode**

- (i) Fashion Merchandising**
- (ii) Global Fashion Management**

Through this programme, graduates can integrate various well-partitioned educational disciplines, from global product design and merchandising, and the management of supply and quality, to marketing and branding; and advance their own expertise, analytical skills and visions to a more sophisticated postgraduate level. Graduates can effectively manage globally dispersed interacting business tasks.



## **Enquiry**

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## Diverse Support from FAST

### Entry Scholarships for Prospective Undergraduate Students

Admission scholarships ranging from HK\$10,000 to full-tuition coverage are available for outstanding admittees on the basis of their excellent academic or non-academic performance.

### Sponsorship for Internship Enhancement Programme

FAST is committed to providing vast internship opportunities for students to apply what they have learned and obtain real work experience. To encourage undergraduate students to engage in the internship, Sponsorship for Internship Enhancement Programme with a maximum amount of HK\$5,000 for a local internship and HK\$10,000 for an offshore internship is offered. FAST also organises regular pre-internship workshops to facilitate students the transition from study environment to the workplace. Topics such as communication, presentation skills and time management will be delivered by professional trainers.

### Student Exchange Programme

At FAST, students are provided with extensive exchange opportunities to enhance the holistic development of students particularly in the areas of global outlook, language skills, social and national responsibility and cultural appreciation. Partnerships with over 40 renowned universities have been established all over the world in Australia, Canada, Finland, France, Germany, Italy, Japan, Korea, Singapore, Sweden, UK, USA, etc.





# Messages From Alumni

## Ding Tong

### Graduate of BSc (Hons) in Applied Biology with Biotechnology

Studying in the Department of Applied Biology and Chemical Technology (ABCT) has brought me a lifelong benefit. Not only does ABCT teach us theoretical knowledge, but it also nurtures us the importance of practical skills, laying a solid foundation for our study. ABCT provides us with various overseas exchange opportunities and summer research programmes, allowing us to exchange in world-renowned universities, including Harvard University and UCLA. These exchange programs have not only broadened our international perspective but also strengthened our research skills.



## Jenna Ho

### Graduate of BSc (Hons) in Investment Science, Citi Bank

The Investment Science Programme helped me develop theoretical knowledge, quantitative skillset, and interpersonal skills. As a science student, I learnt far beyond solving equations. We are encouraged to explore different statistical tools and software such as SAS, SPSS, R and Minitab. These software are widely used in my daily work of validating prices of different bonds and equities. Moreover, my training enables me to establish insight through analysing data. This programme has equipped me to pursue a career in the banking industry.



## Edwin Hui

### Graduate of PhD in Physics, Director of DreamsAI Limited

When I was a PhD graduate from Department of Applied Physics (AP), I had been solving Physics problems. These training has developed my critical thinking and problem solving skills, which has fostered me to become successful in my career development of setting up DreamsAI. DreamsAI is a newly established company that focuses on Robotic Process Automation (RPA). RPA is the technology that allows anyone today to configure computer software or a "robot" to emulate and integrate the actions of a human interacting within digital systems to execute a business process.



## Cheung Ka-wa, Samantha

### Graduate of BA (Hons) Scheme in Fashion and Textiles

The Institute of Textiles and Clothing (ITC) has provided me with a platform to explore my interest in fashion through which I further enhanced my knowledge and professional competence. During my life at ITC, I am grateful that I have been given so many opportunities and wonderful experiences. For example, I had a chance to present a business proposal at the World Retail Congress in Dubai, and I was shortlisted as a finalist in a lingerie design competition. All these experiences made my journey meaningful. My advice is to work hard and enjoy it.



#### Contact us:

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The programme guide was printed in September 2021. Applicants are advised to visit Academic Registry's website [www.polyu.edu.hk/study](http://www.polyu.edu.hk/study) for the latest information including admission score calculation mechanism.

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