Biotechnology and Business (BIBU)

Program Overview

The Biotechnology and Business Program (BIBU) is jointly offered by the School of Science and the School of Business and Management. It aims to groom students with a hybrid interest in both biotechnology applications and business operations. It offers students a broad-based learning experience that encompasses essential life science and biotechnology knowledge, as well as complementary business know-how, including accounting, finance, economics, marketing, operations management, etc. It also further enhances students' creative and critical thinking abilities while helping them develop a global outlook on biotechnology development and applications, thereby laying a solid foundation of knowledge and skills to develop, manage, and market biotechnology initiatives.

The goal of the program is to nurture competent students to become industry professionals who possess both technical knowledge and a business mind. Ideal candidates will be students who are technically competent, interested in biotechnology applications, as well as eager to develop a leadership career in the biotechnology or life science-related industries.

Career Prospects

The holistic BIBU experience prepares students to excel in any career path they aspire to. This program offers rigorous training in both biotechnology and business, which is designed to prepare students for successful leadership positions within the biotechnology industry. Potential employers include multinational pharmaceutical companies, vendors of biotechnology products/services, consulting firms focusing on the biotechnology and pharmaceutical industries etc. And a wide range of career opportunities are available in both private and public sectors.

Data Science and Technology (DSCT)

Program Overview

The Data Science and Technology (DSCT) program is jointly offered by the School of Science and the School of Engineering. Every day a lot of data specialist/scientist positions are created in various business and industry sectors to make use of the massive datasets collected there. Graduates of data science and technology is of high demand in today's job market. The program will equip students with various mathematical tools, data analytical skills and IT technologies to make sense of data obtained from various sources.

This 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 also provide students a solid foundation in the fundamental and in-depth knowledge in specific areas with emphasis on students' mathematical and computational disciplines. Additionally, students will 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, data visualization, etc.

This program provides students rigorous training not only on the mathematical and computational background but also on hands-on data analytical skills that give them a solid foundation for their future career.

Career Prospects

A lot of data specialist/scientist positions are created every day in various business and industry sectors to make use of the massive datasets collected there. Graduates of data science and technology is 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 etc.

Mathematics and Economics (MAEC)

Program Overview

The Mathematics and Economics (MAEC) program is jointly offered by the School of Science and the School of Business and Management of HKUST. The program provides students with solid training in the fundamental theories of both mathematics and economics. The curriculum equips students with quantitative reasoning skills, conceptual understanding and the ability to effectively communicate in mathematics and in the language of economics and social sciences. This interdisciplinary degree is suited to students who seek the option of taking a quantitatively oriented job in the finance industry or who intend to pursue postgraduate study in applied mathematics, economics, business or related areas such as operations research or management science.

The complexity and technical aspects of contemporary economic problems exhibit strong synergy between mathematics and economics. The program offers an advantage to students who would otherwise major in mathematics or economics alone. We aim to provide sequences of advanced mathematics and economics courses that equip students with a strong quantitative background in economics and related areas in management and finance, thus preparing them for a successful career in the banking and finance industry or further studies in graduate school.

Career Prospects

Career opportunities in the banking and finance industry in Hong Kong are promising for those who are capable of applying mathematical tools to understand the financial markets and make economic forecasts. Graduates with an interdisciplinary degree are increasingly valued and needed in the job market, and tend to have more diverse career options than those majoring in Mathematics or Economics alone. A number of MAEC alumni have joined top-ranked financial institutions and multinational firms. Our MAEC graduates are equipped with sufficient background for entry into advanced/professional degree programs in economics, financial mathematics, statistics, and other business-related fields. Recent graduates have been admitted into PhD/Master's programs at leading universities in the world.

Risk Management and Business Intelligence (RMBI)

Program Overview

Risk management and business intelligence form a vital part of a company's strategic planning and decision-making in the globalized era. Fast-paced developments in asset management, financial technologies, insurance practice, marketing, healthcare, and other challenges all advocate the essential need for firms to assess and mitigate risk effectively with the analysis and management of the ever-growing volume of business data. The BSc in Risk Management and Business Intelligence (RMBI) integrates both risk management study and business intelligence study and address their market needs in one single undergraduate program.

Combining the world-class expertise of HKUST School of Business and Management, School of Engineering, and School of Science, the cutting-edge RMBI program incorporates a curriculum that caters to market needs with an emphasis on quantitative techniques and business knowledge, encompassing:

- Understanding of risks in financial institutions and other firms, including market risks, credit risks, operational risks, and business risks

- Mathematical models and methods for assessing and minimizing risks

- Data/text mining methods and advanced technologies to analyze and manage the increasingly large volume of business data available for decision-making

FAQ

What is the difference between the BIBU Program and the existing dual degree program of BSc in Biotechnology and BBA in General Business Management?

The 4-year BIBU Program has different objectives from the 5-year dual degree program. The dual degree program equips students with in-depth knowledge in both disciplines, whereas the interdisciplinary BIBU Program aims to equip students with the essential knowledge in biotechnology, complemented with business know-how and skills to effectively understand, manage, and market biotechnology initiatives.

How is the BIBU Program different from studying a Biotechnology degree with a minor in Business?

Students with a major in biotechnology and a minor in business will receive broad-based science training followed by in-depth theoretical training in biotechnology and bioproduct applications. The minor in business offers students a basic understanding of business but does not provide sufficient training for them to take on biotechnology management or entrepreneurial roles. The BIBU curriculum is designed to include approximately equal credits in biotechnology and business complemented with interdisciplinary courses.

What is the advantage of applying for direct entry to the BIBU Program?

Students taking BIBU as their first major are exempted from the SSCI/SBM core course requirements. The curriculum is tailor-made to include only select courses from both Schools, which allows students with dual interests to follow a coordinated and integrated curriculum so that they can adapt to their study earlier to pursue their interest or meet their career goals.

The Bachelor of Science in Biotechnology and Business (BIBU) Program is suited to high school graduates with a hybrid interest in both biotechnology and business. Ideal candidates will be students who are technically competent and interested in biotechnology applications, and who are eager to develop a managerial or leadership career in the biotechnology- or life science-related industries.

The Program aims to admit around 60 students per year (around 30 through direct entry via JUPAS/Non-JUPAS admission scheme, and around 30 through SSCI/SBM major selection exercise at the end of year 1 study).

Admissions Enquiries

School of Science

The Hong Kong University of Science and Technology
Clear Water Bay, Kowloon, Hong Kong

Tel: (852) 2358 5065 | Fax: (852) 2358 1464
Email: ugscience@ust.hk | Website: http://bibu.ust.hk

Jointly offered by:

School of 理學院 Science

HKUST BUSINESS SCHOOL 香港科大商學院

香港科技大學
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Bachelor of Science in
BIOTECHNOLOGY AND BUSINESS
(BIBU) JS5811
( )

Program Introduction

Biotechnology is the application of techniques and processes that utilize biological systems to provide innovative solutions to many complex issues in agriculture, medicine, food, energy and environment. As we enter the 21st Century, critical advancements in the field, together with the continued academic excellence in biosciences and scientific human resources, collectively point to a continued outgrowth of biotechnology industry.

Mainland China is one of the top five emerging biotechnology leaders in Asia Pacific. In light of these booming development, both government and private sectors give fresh impetus to further move this emerging industry forward quickly. As indicated in the 2018-19 Budget of the HKSAR Government, Biotechnology is one of the focused areas for development under the Innovation and Technology sector; ten billion Hong Kong Dollars will be allocated to upgrade the facilities in the Science Park as well as to support enterprises engaged in biotechnology. With enormous potential of biotechnology for the future, there is an increasing demand in both Hong Kong and mainland China for candidates who can serve the industry at the levels of research and development, technical support, and management. Current biotechnology employees are mostly trained in either science or management; talents who possess both technical knowledge and a business mind are scarce in the region.

In view of this, the School of Science (SSCI) and the School of Business and Management (SBM) of HKUST have jointly developed a BSc program in Biotechnology and Business (BIBU) to meet the regional demand for professionals. The interdisciplinary curriculum will equip students with a solid foundation of knowledge and skills to function effectively in the industry, enhance students' creativity and critical thinking skills, and provide them with a global outlook on biotechnology development and applications. The goal is to nurture students to become effective managers and leaders in the biotechnology industry in Hong Kong and Greater China.

Program Structure

The holistic BIBU curriculum spans multiple disciplines including various domains of life science and biotechnology, as well as foundational business subjects including managerial accounting, micro/macroeconomics, and operations management.

Interdisciplinary courses such as "Biotechnology and Business Seminar" and "Biotechnology Entrepreneurship and Business Operations" represent unique elements in the curriculum. These courses allow students to make connections between ideas and concepts across the disciplinary boundary of biotechnology and business, deepen their learning experience, and develop their cognitive skills, critical thinking and creative problem solving skills.

This is a 4-year program with a total of 124-134 credits, including:
- University Common Core: 36 credits
- English Communication: 6 credits
- Mathematics: 3-4 credits
- Business: 29 credits
- Science/Life Science: 31-37 credits
- Interdisciplinary Courses: 10-13 credits
- Biotechnology and Business Electives: 9 credits#

Students may reuse a maximum of 9 credits of these courses to count towards both Major and University Common Core requirements.

Program Highlights

- A unique undergraduate program specifically designed to groom competent students who are interested to pursue a career in biotechnology- or life science-related industries in the global and particularly the Greater China market

- Broad-based learning experience that cuts across biotechnology, life science applications and business management, providing students a solid foundation to serve and lead in the biotech industry

- Internship opportunities for students to gain practical industry experience, which helps to increase chances of employment post-graduation

- HKUST is ranked No. 2 in Hong Kong and Top 2 in Asia in two business-related disciplines (QS World University Rankings 2019), and No. 12 in Natural Science (QS Asian University Rankings 2019)

Career Prospects

- The holistic BIBU experience prepares students to excel in any career path they aspire to. A wide variety of career opportunities are available in both public and private sectors in Hong Kong and Greater China.

- Potential employers include multinational pharmaceutical companies, vendors of biotechnology products/services, consulting firms focusing on the biotechnology and pharmaceutical industries, and many more.

Admission Requirements

Students may apply for the BIBU program through direct choice in JUPAS/Non-JUPAS admission scheme, or transfer from the Science (Group B) program (JS5103) or any SBM programs after their first year of study. Admission is based on academic results and interviews.

For JUPAS-HKDSE Applicants

Minimum Requirement:

Core Subjects	Minimum Level Required
English Language	4
Chinese Language	3
Mathematics (Compulsory Module)	3
Liberal Studies	2
Elective Subject(s)	
Elective 1: Must be Biology or Chemistry	3
Elective 2: Any Category A subjects / M1/M2	3

JUPAS Score Calculation – Best 6 Subjects with Weighting:

Subjects	Weighting
English Language	x 2
Mathematics (Compulsory Module)	x 2
Biology or Chemistry	x 1.5
Next best 3 subjects	x 1

For Applicants with International Qualifications

In addition to fulfilling the University's general requirements, applicants must have at least one senior level subject from:
Biology / Chemistry / Mathematics

香港科技大學
THE HONG KONG UNIVERSITY OF
SCIENCE AND TECHNOLOGY

BSc in Data Science and Technology
數據科學與技術 (理學士)

A joint program offered by

Department of Computer Science and Engineering
and
Department of Mathematics

Learn Data Science and Technology! Explore Brave New World!
探索數據科學與技術！發掘新時代潛能 ！

Online Mobile Marketing

Gaming

Self-Driving Car

Program Overview:

We are living in a world full of massive data. How to interpret and utilize the data with advanced strategies and technologies? The data science and technology program will equip students with various mathematical tools, data analytical skills and IT technologies 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, programming skills, mathematical modeling. Students will be provided industry experience to apply their knowledge to real life application. This program provides students rigorous training not only on hands-on skills but also on the mathematical and computational background that will give them a solid foundation for their future career.

Admission:

Students from the School of Science *[JUPAS Code 5102 (SSCI-A)]* or the School of Engineering *[JUPAS Code 5200]* through SBA route (School-Based Admission) after they have finished the first year of study and completed the major pre-requisite courses. Selection criteria will follow the rules adopted by the School of Science and the School of Engineering on prioritizing the students' major choices.

Intake Quota: 40

Jointly offered by:

SENG
工學院
SCHOOL OF
ENGINEERING

School of 理學院
Science

dsct.ust.hk

Career Prospects:

A lot of data specialist/scientist positions are created every day in various business and industry sectors to make use of the massive datasets collected there. Graduates of data science and technology is 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 etc.

Strategic Cloud Engineer

Manager Research Analytics for Financial Crime Risk

Data Engineer

DSCT

Digital Analytics for insurance

Deep Learning Research Scientist

Data Scientist

Data Management Specialist

Data & Analytics Specialist

Essential Skills in DSCT:

Probability and Statistics, Data Visualization,
Machine Learning, Programming, Cloud Computing, etc.

Jointly offered by:

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ENGINEERING

School of 理學院
Science

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Career Prospects

- Promising career opportunities in the banking and finance industry for MAEC graduates who are capable of applying mathematical tools to financial markets and economic forecasting

- Interdisciplinary training highly valued by employers: more diverse career options than those majoring in Mathematics or Economics alone

- Sufficient academic background for entry into advanced/professional degree programs in economics, financial mathematics, statistics, and other business-related fields

- Recent placements include:

  - Top-tier financial institutions, consulting firms, and IT companies

  - Doctoral or Master's programs at leading universities such as Chicago, Columbia, Stanford, and Yale

Admissions Enquiries

School of Science

The Hong Kong University of Science and Technology

Clear Water Bay, Kowloon, Hong Kong

Tel: (852) 2358 5065

Fax: (852) 2358 1464

Email: ugscience@ust.hk

Website: http://maec.ust.hk

香港科技大學
THE HONG KONG
UNIVERSITY OF SCIENCE
AND TECHNOLOGY

MTPC-G1008I

BSc in Mathematics and Economics (MAEC)

理學士（數學與經濟學）JS5813

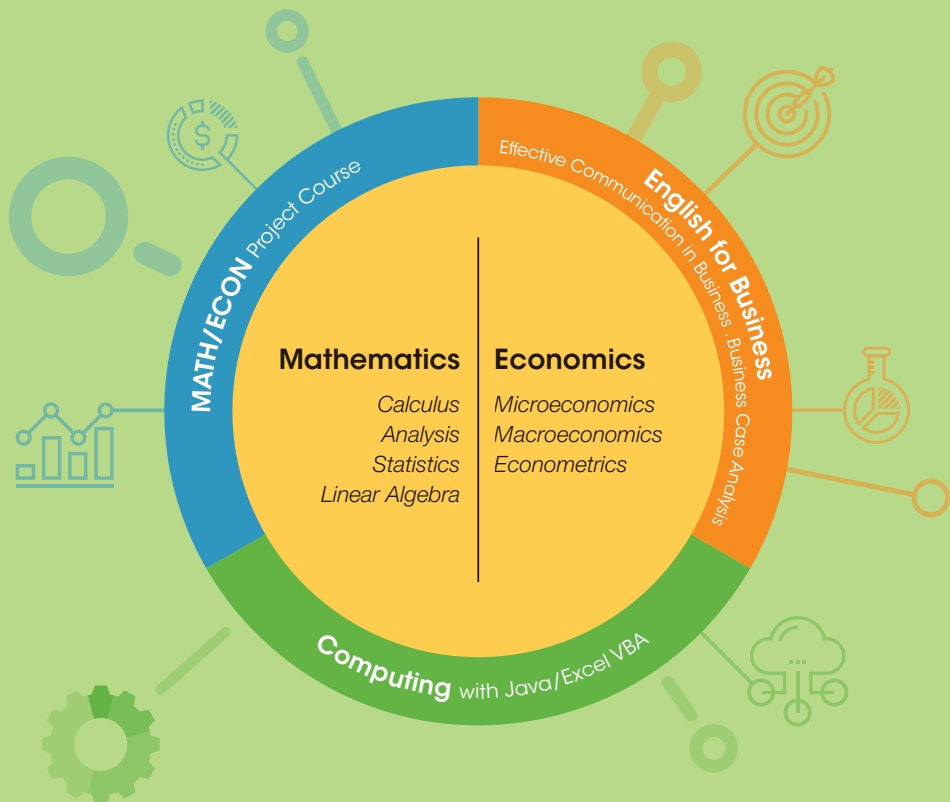Jointly offered by:

School of Science 理學院

HKUST BUSINESS SCHOOL 香港科大商學院

Program Highlights

- Unique undergraduate program in Hong Kong that combines modern economic theory with mathematical skills

- Strong quantitative training in economics, preparing students for a successful career in the business, finance, or public sectors

- Broad-based education that instills lifelong learning skills

MATH/ECON Project Course

English for Business
Effective Communication in Business, Business Case Analysis

Mathematics
Calculus
Analysis
Statistics
Linear Algebra

Economics
Microeconomics
Macroeconomics
Econometrics

Computing with Java/Excel VBA

Program Curriculum

The curriculum provides students with solid training in the fundamental theories of both mathematics and economics. Students will be equipped with quantitative reasoning skills, conceptual understanding, and the ability to effectively communicate in mathematics and in the language of social sciences.

HKUST

Admission Requirements

Students may apply for the MAEC program through direct choice in JUPAS/ Non-JUPAS admission scheme, or transfer from the Science (Group A) program (JS5102) or any SBM programs after their first year of study. Admission is based on academic results and interview performance.

For JUPAS-HKDSE Applicants

Core Subjects	Minimum Level Required
English Language	4
Chinese Language	3
Mathematics (Compulsory Module)	3
Liberal Studies	2

Elective Subjects

Elective 1: One of: M1 / M2 / Economics / Biology / Physics / Chemistry / Combined Science / Integrated Science	3
Elective 2: One of: M1 / M2 / Any Category A subjects	3

JUPAS Score Calculation – Best 6 Subjects with Weighting

Subjects	Weighting
English Language	x 2
Mathematics (Compulsory Module)	x 2
Best Elective: M1 / M2; or	x 2
Economics / Biology / Physics / Chemistry / Combined Science / Integrated Science	x 1.5
Next best 3 subjects: Any other subjects	x 1

For Applicants with International Qualifications

In addition to fulfilling the University's general requirements, applicants must have at least one senior level subject from: Mathematics / Biology / Chemistry / Physics