



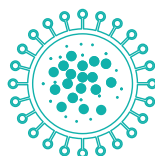
# BSc in Biochemistry and Cell Biology (BCB)

# BSc in Biotechnology (BIOT)

# BSc in Biomedical and Health Sciences (BMH)

Life Science is a diverse and exciting field with numerous technology and practical applications spanning academia, industry, medicine and agriculture. The Division of Life Science (LIFS) offers four major programs at the undergraduate level:

- BSc in Biochemistry and Cell Biology (BCB)
- BSc in Biotechnology (BIOT)
- BSc in Biomedical and Health Sciences (BMH)
- BSc in Biotechnology and Business (BIBU) \* jointly offered by the School of Science and the School of Business and Management



## BSc in Biochemistry and Cell Biology (BCB)

Students will study how living organisms are built upon the complex interplay of biological pathways. An emphasis is placed on knowledge gained through research on cell-free experimental systems (Biochemistry) and within cells (Cell Biology). The early curriculum is broad-based and teaches students the fundamental concepts and principles of Biochemistry and Cell Biology. This 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.

## BSc in Biotechnology (BIOT)

The Biotechnology (BIOT) program is designed to cover the research and development of biotechnology products and services, including medicines, cosmetics, health supplements and genetic diagnostics. The program provides students with theoretical and practical knowledge of the latest biotechnological developments, with a particular focus on the applied aspects of life science. The curriculum also requires a basic understanding of concepts across various biological spectra including biochemistry, cell biology, molecular biology, microbiology and genetics.

## BSc in Biomedical and Health Sciences (BMH)

Students will study the scientific principles of different aspects of the biomedical and health sciences. This program provides exposure to advanced diagnostic and disease modeling technologies including the use of omics technologies, computational analytical pipelines and the generation of experimental models for accelerated drug or treatment discoveries in a pre-clinical setting. The early curriculum is broad-based, covering both the theoretical and practical aspects of biomedical science. The integration of foundational knowledge is achieved through inquiry-based experiential learning courses that emphasize teamwork.

## Program Structure

In Year 1, students will enrol in science foundation courses according to their interests and background, as well as courses in other areas to fulfil the University Common Core requirement. After completed the major pre-requisite courses, students can declare BCB / BIOT as their major program in Year 2. Students can apply for the BMH program through direct choice in the JUPAS / Non-JUPAS admissions scheme or apply for transfer from the Science (Group B) program into BMH program after their first year of study.

For **BIOT** students, they can choose one of two study tracks that have distinct strengths:

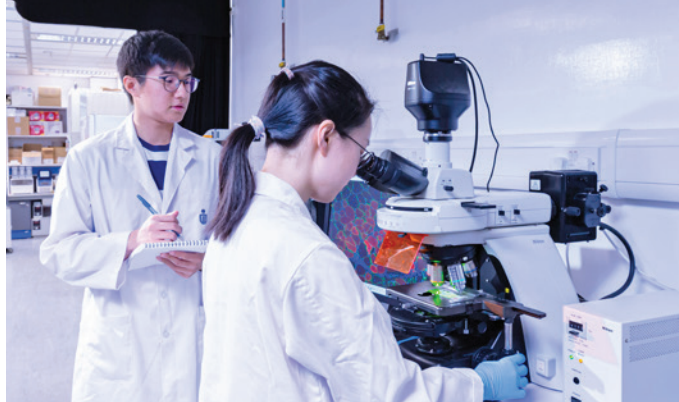
**Applied Bioscience Track** - aims at enhancing students' learning through a range of experiential learning or project-based courses. Students will be provided with ample opportunities to tackle real-world problems in biotechnology, formulate experimental plans, devise biotechnological solutions, and transfer practical knowledge to society.

**Entrepreneurship Track** – aims at enhancing students' vision and knowledge of entrepreneurship through various co-curricular activities. Students will be trained to formulate integrated commercial solutions to academic and real-world problems in biotechnology. Students will also be encouraged to enter internal and external entrepreneurial competitions and turn their ideas into commercial practice.



## Research Foci

- Cellular Regulation and Signalling
- Cancer Biology
- Developmental Biology
- Molecular and Cellular Neuroscience
- Macromolecular Structure and Function
- Biotechnology and Medicinal Biochemistry



Faculty members working in these areas form coordinated research teams. Synergy between research laboratories empowers multi-disciplinary investigation of biological problems. At the same time, it creates a stimulating atmosphere in which students experience the challenge of modern research through direct participation.

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

## Internship and Enrichment Opportunities



Focus Group Meeting - LIFS-related Postgraduate Research & Job Prospects



LIFS Professional Development Workshop

## Career Prospects

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

The BCB graduates will have a broad range of career options. Students will be well-prepared for postgraduate research studies and future employment opportunities in academic, medical and industrial settings. 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 technological advances and evolving social expectations driving an expansion in career and employment opportunities, student will have exceptional prospects to pursue their careers in life science.

### BSc in Biotechnology (BIOT)

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

### BSc in Biomedical and Health Sciences (BMH)

The BMH graduates are primed for postgraduate training in clinical medicine, genetic counselling, and biomedical research. With their immersive training in biomedical technologies, graduates will be able to serve in diverse roles in the healthcare system.







## Words from BCB Graduate

The research-oriented BCB program gave me all-round training that equipped me for a laboratory-based career. HKUST has the highest flexibility in course enrolment so you can select courses that benefit your future endeavours. The Life Science faculty members are friendly and approachable, and they taught me many lab skills and helped me a lot in career planning.

### Sam SIU

BSc in Biochemistry and Cell Biology, Class of 2023

## Admissions Requirements

Prospective students may apply for the *Science (Group B) program (JS5103)* through direct choice in the JUPAS / Non-JUPAS admissions scheme.

Upon completion of the major pre-requisite courses at the end of the first year, students can declare major in Biochemistry and Cell Biology (BCB), Biotechnology (BIOT), or Biomedical and Health Sciences (BMH) in Year 2.

The pre-requisite courses include:

- LIFS 1901 General Biology I\*, and
- LIFS 1902 General Biology II

\* Students with level 3 or above in HKDSE 1x Biology are exempted from taking LIFS 1901.

Students can apply for the BMH program through direct choice in the JUPAS / Non-JUPAS admissions scheme or apply for transfer from the Science (Group B) program after their first year of study. Students interested in BMH program are encouraged to include both BMH program (*JS5118*) and *Science (Group B) program (JS5103)* in their JUPAS / Non-JUPAS program choices.

## JOIN BCB/BIOT/BMH PROGRAM GO BEYOND YOUR LIMITS FIND TRANSFORMATION HERE

### School of Science – Undergraduate Admissions

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### Division of Life Science

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LIFS website



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