

Biochemistry and Cell Biology (BCB)

Program Overview

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 (BCB). This will enable students to explore and develop their own interests in various aspects of modern molecular life science. 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.

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.

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.

Biotechnology (BIOT)

Program Overview

The Biotechnology (BIOT) 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.

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.

Career Prospects

The Biotechnology 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.

Biological Science (BISC)

Program Overview

The Biological Science (BISC) 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 Business, Engineering, and Humanities and Social Science.

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.

Career Prospects

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.

Pre-major Requirements

Students **MUST** take the following courses prior to enrollment into one of the majors

Major Pre-requisite course (s)	Credits
LIFS 1901 General Biology I	3
LIFS 1902 General Biology II	3

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



For Inquiries of Academic Nature

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Division of Life Science

<http://life-sci.ust.hk/>

For Further Information

To know more about the University's facilities, residential accommodation, and other aspects of campus life, please refer to the University's Handbook for Prospective Undergraduate Students.

The Handbook and application forms are available from:

Undergraduate Recruitment and Admissions Office

The Hong Kong University of Science and Technology

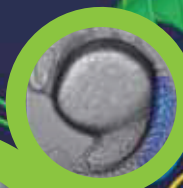
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Division of Life Science



Division of Life Science

Recent advances in science and technology have ushered in a golden age for Life Science, spanning academia, industry, medicine, healthcare, environment and agriculture. Accordingly we expect to see a sustained demand for the graduates from the different programs within the Division of Life Science (LIFS). Life Science can be studied at multiple levels and angles and can therefore accommodate a wide range of student aptitudes and motivation. The curricula for the three LIFS programs reflect this reality and are tailored for students either with a general interest in Life Science (BISC Program) or for those attracted to more specialized studies of either applied (BIOT Program) or basic Life Science (BCB Program). In addition there is sufficient flexibility for students to switch between LIFS majors should their interests change. Besides subject knowledge and academic rigor, LIFS graduates will develop effective communication skills, independent learning and scientific research capabilities.



Overview of Undergraduate Programs

Bachelor of Science in Biochemistry and Cell Biology (BCB)

The BCB program emphasizes basic life science and addresses how complex biomolecules work together either in simplified experimental systems (Biochemistry) or within cells (Cell Biology). The BCB curriculum is broad-based initially thus providing students with a firm foundation in different aspects of biochemistry, cell biology and molecular biology. This will equip students to explore more specialized areas via advanced elective courses as they progress through the program. One of the main features of the BCB program is to nurture students who are motivated to pursue postgraduate training and future careers in biomedical research, either in the academic or industry sector. Accordingly, BCB students are encouraged to undertake significant practical training via both lab courses and actual research in our faculty's research laboratories.

Career Prospects:

BCB graduates will have a broad range of career options. Some will be well-prepared for postgraduate research studies and future employment opportunities in academic, medical and biotechnology research. However, BCB graduates will also be fully equipped to pursue other careers in the private and government sectors requiring a life science background, including healthcare, biotechnology and education.

Highlight:

- To provide students with a firm foundation in different aspects of modern biochemistry, cell biology, molecular biology and genetics;
- To nurture students who are motivated to pursue postgraduate training and research careers in the academic or industry sector



Bachelor of Science in Biological Sciences (BISC)

The BISC program will provide students with a broad contemporary knowledge covering the major themes in Life Science, from biomolecules to organisms and systems biology. The flexibility of the BISC program will also allow for students to broaden their skill base by taking more elective courses offered by other academic departments such as Engineering, Social Sciences, Humanities and Business. It will also be feasible for students lacking high school Biology background to enter and prosper in the BISC program.

Career Prospects:

This major 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. A broad range of career options in private and public sectors will be available to our Biological Science graduates.

Highlight:

- To equip the students with knowledge in modern biology related to biosystems, health and education;
- To facilitate students to broaden their skill base via a selection of elective courses in Engineering, Social Sciences, Humanities and Business.



Bachelor of Science in Biotechnology (BIOT)

Biotechnology involves applications of Life Science to commercial outcomes and solving problems in healthcare, medical diagnostics, agriculture and the environment. The Biotechnology field is well established as reflected by the global occurrence of relevant undergraduate programs. The BIOT program will provide students a sound theoretical training in the necessary aspects of Life Science (biochemistry, cell biology and genetics) but will also emphasize practical realities crucial for biotech product development. The latter aspect defines the BIOT program and will be delivered via a dedicated core curriculum, followed by a large number of specialized elective courses. BIOT graduates will also be well prepared to pursue postgraduate studies.

Career Prospects:

Biotechnology is a rapidly growing field and there are ample career opportunities in both the commercial and public sectors at different levels (research, technical, business and management) and in a variety of fields (pharmaceutical, medical, agricultural and educational). The underlying objective of the major is to serve as a biotechnology powerhouse to provide the manpower market with fresh impetus so as to move this emerging industry forward.

Highlight:

- To provide students sound theoretical training in modern life sciences;
- To acquaint students with practical skills crucial for biotech product research, development and production.

