Biochemistry is the study of biological molecules such as proteins, nucleic acids, and lipids, which form the morphological structures represented by the cell and cellular organelles, provide machinery for the inheritance and expression of genetic information, and energize catalytic transformations essential to cellular growth and reproduction. The study of the nature of these molecules and their reactions has brought about rapid advances in the biological and medical sciences, and has enabled the development of biotechnological industries that are playing an increasingly important role in the global economy.

The Department of Biochemistry offers comprehensive teaching and research programs in both basic and applied aspects of biochemistry. At the same time it maintains a close relationship with the Biotechnology Research Institute, reflecting the fundamental significance of biochemistry in that field.

Both the teaching and research laboratories in the Department are equipped with advanced instrumentation. Equipment, serving biochemical and biotechnological studies, include nuclear magnetic resonance spectrometer, mass spectrometer - analytical ultracentrifuge, automated DNA sequencer, high pressure liquid chromatograph, fermentor, flow cytometer, gamma ray irradiator, confocal microscopic system, fluorescence live cell imaging system, and tissue culture facilities.

UNDERGRADUATE PROGRAMS

The Department offers two undergraduate programs: a three-year program that leads to the BSc degree in Biochemistry, and a four-year joint program with the Hong Kong Institute of Education (HKIEd) that leads to the BSc degree in Biochemistry and Science Education.

**BSc in Biochemistry:** The objectives of the BSc program in Biochemistry are to instruct students in understanding biochemical molecules and processes and to provide training in the methodologies used in laboratory investigation. The program emphasizes both theory and experimentation.

**BSc in Biochemistry and Science Education:** This program aims at training students to become secondary teachers in A-level Biology or Chemistry and in Integrated Science. This four-year program is composed of a three-year program in biochemistry provided by the Hong Kong University of Science and Technology, and a one-year professional teacher education provided by HKIEd. Enrollment into this program is made at the end of the first year of study in the regular BSc in Biochemistry program. Program graduates will be granted Registered Teacher Status (RTS) by the Education Bureau of the Government of the HKSAR upon
application. Interested students may also pursue postgraduate study and research in biochemistry and other biological sciences.

**Curriculum**

Description of the curriculum and courses for the following programs are presented online at [http://publish.ust.hk/calendar](http://publish.ust.hk/calendar):

- Bachelor of Science (BSc) in Biochemistry
- Bachelor of Science (BSc) in Biochemistry and Science Education
- Undergraduate Minor Program in Biochemistry

**POSTGRADUATE PROGRAMS AND RESEARCH**

The Department of Biochemistry is equipped with modern facilities. It offers a comprehensive postgraduate training program covering both basic and applied aspects of biochemistry, with its faculty members also carrying out innovative research in these fields. The current research focus of the Department includes cellular regulation and signaling, biotechnology and medicinal biochemistry, and macromolecular structure and function. Faculty members working in each of these areas form a coordinated research team. Students will receive solid training and experience the challenge of modern research through direct participation.

The Department offers postgraduate programs leading to the degrees of Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) in Biochemistry. The Department also participates in the Master of Science (MSc) program in Biotechnology and the Master of Science (MSc) program in Environmental Science.

Admission to the MPhil program in Biochemistry or the MSc program in Biotechnology requires a BSc degree in biochemistry, chemistry, or a discipline related to biological science. Admission to the PhD program requires a BSc, an MPhil or an MSc degree in biochemistry, biotechnology, chemistry, or a discipline related to biological science. Transfer to the PhD program after completion of at least one year of the MPhil or MSc program may be considered on the basis of a progress review.

**Curriculum**

Description of the curriculum and courses for the following programs are presented online at [http://publish.ust.hk/calendar](http://publish.ust.hk/calendar):

*Taught Postgraduate Program:*
- Master of Science (MSc) in Biotechnology (Joint Degree Program)

*Research Postgraduate Programs:*
- Master of Philosophy (MPhil) in Biochemistry
- Doctor of Philosophy (PhD) in Biochemistry