The Chinese University of Hong Kong
Faculty of Science
School of Life Sciences

生物化學及生物醫學 理學碩士
兼讀課程
Master of Science in
Biochemical and Biomedical Sciences
Part-time programme
Programme Committee

Prof. Edwin Chan, School of Life Sciences (Programme Director)
Prof. K.M. Chan, School of Life Sciences
Prof. S.K. Kong, School of Life Sciences
Prof. P.C. Shaw, School of Life Sciences

Teachers

Professors from School of Life Sciences, CUHK

Professors from School of Biomedical Sciences, CUHK

Professors from Prince of Wales Hospital

Specialists from the biotechnology industry and forensic profession
CUHK Mission
To assist in the preservation, creation, application and dissemination of knowledge by teaching, research & public service in a comprehensive range of disciplines, thereby serving the needs and enhancing the well-being of the citizens of Hong Kong, China as a whole, and the wider world community.

CUHK Vision
To be acknowledged locally, nationally and internationally as a first-class comprehensive research university whose bilingual and multicultural dimensions of student education, scholarly output and contribution to the community consistently meet standards of excellence.
Objectives of MScBBS

To provide a training programme to enhance and update students' knowledge in biochemistry and biomedical sciences;

To give students a comprehensive training in the state-of-the-art techniques and methodologies used in biochemistry and biomedical sciences;

To provide students the skills on research, analytical and innovative thinking, in addition to the integration of theories and applications in biochemistry and biomedical sciences.
Program Features

• CUHK is **one of the research universities** in Hong Kong.

• **School of Life Sciences** is newly formed in Aug 2010.

• Covers **a wide range of disciplines** from biology, biochemistry to biomedical sciences.

• Places a strong emphasis on cutting edge **research skills and methodologies**.

• Prepares students for **teaching and/or research positions in academia, industry, or government**.
• We offer a lab course (BBMS6200 Methods in Biochemistry) to introduce both the theories and practical skills for biochemical and biomedical analysis.

Not too many part-time programs offer a lab course.

• Students can **conduct research in their M.Sc. projects**.

• Taught by **well-qualified and experienced faculty members**, with web tools for teaching and learning.

• eLearning & Teaching: **CUHK Moodle System**
Study Mode:
• One-/Two-year, part-time basis (max. 4 years).
  (Tue, Wed, Fri: 7:00 pm – 9:30 pm; Sat: 2:30 pm -5:30 pm; Sat: 7:00 pm-9:30 pm)

Language of Instruction: English.

Tuition Fee: HK$ 80,000, paid by four installments.
## Program of Study

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Cross-Divisional Taking of Courses between MSc in Biomedical Engineering and our Programme

Students are allowed to enroll ONE course from M.Sc. in Biomedical Engineering as elective course.

- BMEG7010 Introduction to Biomedical Engineering
- BMEG7020 Basic Biomedical Science
- BMEG7110 Medical Devices and Sensor Networks
- BMEG7120 E-medicine Technologies
- BMEG7130 Medical Robotics
- BMEG7140 BioMEMS and Bio-Nanotechnology
- BMEG7150 Smart Materials for Medical Applications
- BMEG7210 Bioinformatics
- BMEG7310 Prosthetics and Artificial Organs
- BMEG7320 Virtual Medicine and Computer Aided Surgery
- BMEG7330 Medical Imaging
Assessment and Graduation

Assessed by coursework, term paper, written/open book examination & performance according to the grading scheme used for postgraduate courses at CUHK.

A total of 24 units (or 8 courses) are required for graduation.

Course Passing Grade for PG students: Grade C- or above.

No supplementary examination will be arranged.

A student shall be required to discontinue studies if:

1) GPA is 1.0 or below;
2) there are 2 failure grades.

GPA = \( \sum \) (Course unit x Grade point)/Total course units

(A:4.0; A-:3.7; B+:3.3; B:3.0; B-:2.7; C+:2.3; C:2.0; C-:1.7; D+:1.3; D:1.0)
Teaching Quality Assurance

1) Course evaluation by students.

2) Review from external examiner.

3) Audits from CUHK Graduate School.

4) Audits from The Quality Assurance Council of the UGC (University Grants Committee), HKSAR.
e-learning system: Moodle
Programme Director:
Professor Edwin Chan
MMW509B
Tel: 3163-4021
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General Enquires for Graduate Studies:
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General Office: SC191
Tel: 2696-1004 Fax: 2603-7206
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Perspectives in Biochemical Sciences
（生物化學展望）

Presents the latest developments and advancements in biochemical and biomedical sciences.

Examples (One topic/week):
• Pathogenesis and Treatment of HIV Infection and AIDS
• Stem Cells and Stem Cells Research
• Human Genome Projects
• Cancer and its Therapy
• Alcoholism
• Obesity
Biochemical Genetics and Forensic Sciences

Topics include principles of molecular genetics, including the biochemical nature of DNA, genetic codes, regulatory mechanisms, mutation, DNA replication and recombination.

Techniques for proteins & nucleic acids analysis used in forensic analysis will be included.
Biochemical Technology I
(生物化學技術 I)

Topics will include recombinant DNA technology, mammalian cell culture, protein expression and purification, antibody engineering, drug discovery and development processes. Examples:
• Transgenic Animal Technology
• Advanced Forensic DNA Analysis
• Antibody Engineering
• Drug Discovery
Biochemical Technology II
(生物化學技術 II)

It covers the structure of the human genome, the strategies that were used to map and sequence the genome, and details of how genomic sequence information is utilized for pharmacogenomics, drug discovery and diagnostics.

Examples:
• Medical Biotechnology
• Bioinformatics and Data Mining
• Gene Targeting & Gene Profiling
Methods in Biochemistry
(生物化學方法)

Allow students to gain theoretical and practical, hands-on knowledge of various advanced research methodologies.

Examples:
• PAGE electrophoresis and Western blot analysis
• DNA electrophoresis and DNA fingerprinting
• Human cell culture & cytotoxicity assay
• PCR and real-time PCR analysis
• ELISA and flow cytometry
Clinical Biochemistry and Diseases 
(臨床生物化學與疾病)

Outline the mechanisms for controlling carbohydrate, lipid, nucleotide and amino acid pathways under different physiological and nutritional conditions.

Examples:
• Diabetes mellitus,
• Atherosclerosis
• Lipid disorders,
• Inborn errors of carbohydrates & amino acid metabolism
Biochemistry and Public Health
(生物化學及公共衛生)

This course is concerned with the biochemical impacts in environment and food as they relate to public health.

Examples:
• Food additives and contaminants
• Water and sewage treatment
• Pest control
• Pollution
Management and Accreditation of Biochemistry Laboratory

This aim of this course are to introduce basic concepts and adequate skills of laboratory management safety and quality assurance in biochemical laboratories.

Examples:
• Biochemical testing and manufacturing process
• Good laboratory practice
• Laboratory accreditation
• Method validation
M.Sc. Project
(文獻專題討論或實驗專題討論)

To do a literature survey and/or a mini research on a current topic in biochemistry or biomedical sciences under the supervision of a teaching staff of Department of Biochemistry.

Examples:
1) Experimental research:
Role of ion channels in maintaining the self-renewal characteristic of embryonic stem cells

2) Literature review:
Directing embryonic stem cell differentiation into cardiac lineage