Master of Science (MSc) Program in Chemical and Biomolecular Engineering

Program Director:
Xijun HU, Professor of Chemical and Biomolecular Engineering

The Master of Science (MSc) program in Chemical and Biomolecular Engineering is a taught postgraduate program aiming to offer advanced levels of chemical and biomolecular engineering courses to prepare chemical engineers to lead and to take up senior positions.

The program provides students with updated knowledge on products development, process and energy integration, waste minimization and treatment, material sciences, biomolecular science, and biochemical processes. This is a unique program that covers knowledge in areas of bioengineering / environment / nanotechnology, which are the three focal areas of HKUST.

Admission Requirements

Applicants must possess a bachelor's degree in Chemical Engineering or a related discipline with second-class honors or higher, or an equivalent qualification from a recognized university or tertiary institution.

Program Duration

The program can normally be completed in one year in full-time mode, or two years in part-time mode.

Program Fee

The program fee is HK$120,000. New students admitted with credit transfer are also required to pay the full program fee. The program fee covers four terms of study for the full-time MSc program and six terms for the part-time MSc program. Students who stay in the program beyond the normative study period covered by the program fee, or take additional courses or need to retake any courses are required to pay additional fee. Students should refer to the program webpage for details.

Curriculum

Students are required to complete a total of 30 credits of coursework, with at least 12 credits of foundation courses and 6 credits of elective courses. Students may take ten 3-credit taught courses, or eight to nine taught courses plus one 3-/6-credit Independent Project (CBME 6980). Except CBME 6980, courses listed below carry 3 credits each.

Foundation Course List

CBME 5110   Theory and Practice in Heterogeneous Catalysis
CBME 5200   Applied Mathematical Methods in Chemical Engineering
CBME 5210   Advanced Separation Processes

CBME	5300	Advanced Chemical Engineering Thermodynamics
CBME	5400	Advanced Transport Phenomena
CBME	5520	Characterization of Polymers
CBME	5550	Polymer Physics and Advanced Applications
CBME	5610	Advanced Biochemical Engineering
CBME	5780	Environmental Management, Auditing, Licensing and Impacts
CBME	5820	Energy, Environment and Sustainable Development
CBME	5830	Electrochemical Energy Technologies
CBME	5840	Nanomaterials for Chemical Engineering Applications

Elective Course List

CBME	5320	Water Quality and Assessment
CBME	5750	Process Safety Management and Risk Analysis
CBME	5510	Processing of Polymers and Polymer Composites
CBME	5750	Process Safety Management and Risk Analysis
CBME	5760	Advanced Physico-Chemical Treatment Processes
CBME	5810	Energy Integration and Optimization
CBME	5860	Chemical Product Engineering
CBME	6000	Special Topics
CBME	6980	Independent Project

Subject to the approval of the Program Director, students may take a maximum of 9 credits of other postgraduate courses as partial fulfillment of the program requirements.

Part-time students may take a maximum of 9 credits in each term.

Credit Transfer

Credit transfer may be granted to students in recognition of studies completed successfully elsewhere. Upon the approval of the Program Director, a maximum of 12 credits can be transferred to the program, subject to University regulations governing credit transfer for postgraduate programs.

Graduation Requirements

To graduate from the program, a student must complete the program with a graduation grade average (GGA) of 2.850 or above as required of all postgraduate students at the University. Students failing to meet the GGA requirement are required to repeat or take additional course(s) even if they attain passing grades for all courses.