

## **Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) Programs in Chemical and Biomolecular Engineering**

### *Curriculum for Master of Philosophy (MPhil) Program in Chemical and Biomolecular Engineering*

The Master of Philosophy (MPhil) program requires students to complete at least 12 credits of postgraduate courses, with at least 6 credits in Chemical and Biomolecular Engineering.

All full-time and part-time students are required to take and pass ENGG 6770 Professional Development in Engineering in their first 1.5 years of study. Students may be exempted from certain course events, subject to prior approval of the School. Part-time students may be given extension to complete the course, subject to prior approval of the School.

Full-time students must also complete LANG 5001 Postgraduate English for Engineering Research Studies. Students may be exempted from taking LANG 5001 with the agreement of the Department Head and PG Coordinator.

The credits earned from ENGG 6770 and LANG 5001 cannot be counted toward the credit requirements.

Full-time students, including students entering with the HKUST Master of Science degree in Chemical and Biomolecular Engineering, must take and pass CENG 6800 at least twice, and present at least one seminar during their study, counting the oral defense of their MPhil thesis. Part-time students must take and pass CENG 6800 at least once, and present at least one seminar during their study, counting the oral defense of their MPhil thesis.

In addition, students must complete a thesis in order to demonstrate their competence in engineering research. If the student participates in an industrial project and writes a thesis on a work-related topic, the thesis will be supervised jointly by a faculty member of the Department and a representative from the participating company.

### Nanotechnology Concentration

In addition to the program requirements specified above, students who opt for the Nanotechnology concentration are required to:

- Take one NANO course;
- Complete NANO 6010 Advanced Topics in Nano Science and Technology for one term. They can use NANO 6010 to replace one term of registration of CENG 6800; and
- Conduct research in nano area.

### Energy Technology Concentration

In addition to the program requirements specified above, students who opt for the Energy Technology concentration are required to:

- Take one ENEG course;
- Complete ENEG 6010 Advanced Topics in Energy Technology for one term. They can use ENEG 6010 to replace one term of registration of CENG 6800; and
- Conduct research in energy area.

### ***Curriculum for Doctor of Philosophy (PhD) Program in Chemical and Biomolecular Engineering***

The Doctor of Philosophy (PhD) program requires students to complete at least 18 credits of postgraduate courses, with at least 9 credits in Chemical and Biomolecular Engineering, and a doctoral thesis of original research work. Students entering with a master's or equivalent degree in Engineering or related discipline from outside the Department may be granted credit transfer of up to 9 credits by the Department Head and PG Coordinator. Students entering with a master's degree from the Department will be granted credit transfer of up to 12 credits, subject to the approval of the Department Head and PG Coordinator. Students entering without a degree in Chemical and Biomolecular Engineering are encouraged to take some CENG undergraduate core courses, subject to the approval of their thesis supervisor. Students are also required to fulfill the school requirements on PhD programs stipulated in the section of *School of Engineering*.

All full-time and part-time students must take and pass ENGG 6770 Professional Development in Engineering and CENG 6770 Professional Development in Chemical and Biomolecular Engineering. Students may be exempted from certain ENGG 6770 events, subject to prior approval of the School. Part-time students may be exempted from a maximum of 50% of mini-workshops of CENG 6770, subject to prior approval of the Department. Students are expected to complete the Professional Development courses in their first two years of study. Subject to the approval, part-time students may be given extension to complete the courses. HKUST MPhil (CBME) graduates who have taken and passed ENGG 6770 before may be exempted from taking the same course, subject to prior approval from the Department Head and PG Coordinator. Full-time students must also pass LANG 5001 Postgraduate English for Engineering Research Studies. Students may be exempted from taking LANG 5001 with the agreement of the Department Head and PG Coordinator.

The credits earned from ENGG 6770, CENG 6770 and LANG 5001 cannot be counted toward the credit requirements.

Full-time students must take CENG 6800 Chemical Engineering Seminar at least four

times, pass at least twice, and present at least two seminars during their study, counting the oral defense of their PhD thesis. Part-time students and students entering with the HKUST Master of Philosophy degree in Chemical and Biomolecular Engineering must take CENG 6800 Chemical Engineering Seminar at least twice, pass at least once, and present at least one seminar during their study, counting the oral defense of their PhD thesis.

#### Nanotechnology Concentration

In addition to the program requirements specified above, students who opt for the Nanotechnology concentration are required to:

- Take one NANO course;
- Complete NANO 6010 Advanced Topics in Nano Science and Technology for one term. They can use NANO 6010 to replace one term of registration of CENG 6800; and
- Conduct research in nano area.

#### Energy Technology Concentration

In addition to the program requirements specified above, students who opt for the Energy Technology concentration are required to:

- Take one ENEG course;
- Complete ENEG 6010 Advanced Topics in Energy Technology for one term. They can use ENEG 6010 to replace one term of registration of CENG 6800; and
- Conduct research in energy area.

To become a doctoral candidate, the student must pass a qualifying examination within the first 1.5 years of study. The qualifying examination consists of an oral examination given by the Thesis Supervision Committee. The purpose of the oral examination is to establish the student's ability to formulate and conduct original research in the chosen discipline. Upon completion of the postgraduate study program and the thesis, the candidate is required to defend the thesis before a Thesis Examination Committee.