Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) Programs in Computer Science and Engineering

Curriculum for Master of Philosophy (MPhil) Program in Computer Science and Engineering

The Master of Philosophy (MPhil) program seeks to strengthen students' knowledge in computer science and expose them to issues involved in the development, scientific educational and commercial applications of computer systems.   Students must fulfill the following program requirements:

a)   Completion of at least five postgraduate (PG) courses (15 credits), of which at least 8 credits must be earned at HKUST.   Credits used to satisfy the course requirements must cover at least four established research areas of the Department;

b)   Taking and passing 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.   The 1 credit earned from ENGG 6770 cannot be counted toward the credit requirements;

c)   Completion of LANG 5001 Postgraduate English for Academic Purposes. Students can be exempted from taking LANG 5001 with the agreement of the Department Head and PG Coordinator.   The 1 credit earned from LANG 5001 cannot be counted toward the credit requirements;

d)   Completion of Computer Science and Engineering Seminar for two terms;

e)   Registration in COMP 6990 MPhil Thesis Research; and

f)   Presentation and oral defense of the MPhil thesis.

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; and
•   Conduct research in energy area.

Curriculum for Doctor of Philosophy (PhD) Program in Computer Science and Engineering

The Doctor of Philosophy (PhD) program aims to develop the skills needed to identify research issues related to practical applications, to formulate an original research plan that addresses some of the research identified and to independently create a

computing-related solution.

Specific requirements for the PhD program are as below:

a) Completion of at least seven postgraduate (PG) courses (21 credits). Of the seven PG courses, four are required to be PG core courses in different selected core research areas. A list of PG core courses and the areas with which they are affiliated is maintained by the Department. At least one of the PG core courses should be in the area of "Theoretical Computer Science". Students must complete all four PG core courses in different areas by the end of their second year of their PhD study, and of the four core courses, at least two must be completed in their first year of study. Students must obtain a B+ or above for all four PG core courses. Only one Independent Studies course may be used to satisfy the course requirements. Students are also required to fulfill the school requirements on PhD programs. For details, please refer to the section of *School of Engineering*.

(Note: No undergraduate (UG) course can be used to satisfy any of these PG course requirements.)

b) Credits transferred from programs completed in other universities will be considered on a case-by-case basis, subject to the approval of the departmental PG committee. No UG courses can be used for credit transfer to the PhD program. Credits from no more than two PG courses can be transferred from outside the Department.

c) Students must obtain a grade B or above in each of the following UG courses or equivalent, subject to the approval of the PG Coordinator. Credits earned from the following UG courses cannot be counted toward the degree requirement:

- COMP 3511   Operating Systems
- COMP 3711   Design and Analysis of Algorithms
- COMP 3721   Theory of Computation

d) Taking and passing ENGG 6770 Professional Development in Engineering and COMP 6770 Professional Development in Computer Science and Engineering for all full-time and part-time students. Part-time students may be exempted from a maximum of 50% of mini-workshops of ENGG 6770 and COMP 6770, subject to prior approval of the School and the Department respectively. 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 (CSE) 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.

e) Passing LANG 5001 Postgraduate English for Academic Purposes. Students can be exempted from taking LANG 5001 with the agreement of the Department Head and PG Coordinator.

f) The credits earned from ENGG 6770, COMP 6770 and LANG 5001 cannot be

counted toward the credit requirements.

g) Completion of COMP 6911/6912 Computer Science and Engineering Seminar I/II for two terms.

h) Passing a qualifying examination within the first 18 months after admission, with a maximum of two attempts. The qualifying examination consists of a comprehensive, written critical survey and review of the student's intended research focus, and a public oral examination.

i) Submission of a thesis proposal and defending it at a public oral examination, normally within one year after satisfying the qualifying examination requirement, with a maximum of two attempts. The second attempt must be completed within six months of the first attempt. The thesis proposal requirement must be completed before attempting the final thesis defense.

j) Registration in COMP 7990 Doctoral Thesis Research.

k) Presentation and oral defense of the PhD thesis.

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; and
- Conduct research in energy area.