

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

Curriculum for Master of Philosophy (MPhil) Program in Mechanical Engineering

Students enrolled in the Master of Philosophy (MPhil) program in Mechanical Engineering are required to:

- Take 12 credits of postgraduate courses (excluding courses from SBM and SHSS), of which 9 credits must be from MECH courses;
- 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;
- Take LANG 5001 Postgraduate English for Engineering Research Studies. Students can be exempted from taking LANG 5001 with the approval of the Department Head and PG Coordinator;
- The credits earned from ENGG 6770 and LANG 5001 cannot be counted toward the credit requirements;
- Take MECH 6090 Seminar in Mechanical Engineering for at least three terms. Subject to the approval of the Department, students can take MECH 6090 for less than three terms;
- Register in MECH 6990 MPhil Thesis Research every regular term; and
- Present and oral defend the MPhil thesis.

Nanotechnology Concentration

Students who opt for the Nanotechnology Concentration are required to:

- Take 12 credits of postgraduate courses (excluding courses from SBM and SHSS), of which 6 credits must be from MECH courses and 3 credits from NANO courses;
- 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;
- Take LANG 5001 Postgraduate English for Engineering Research Studies. Students can be exempted from taking LANG 5001 with the approval of the Department Head and PG Coordinator;
- The credits earned from ENGG 6770 and LANG 5001 cannot be counted toward the credit requirements;

- Take MECH 6090 Seminar in Mechanical Engineering for at least three terms. Subject to the approval of the Department, students can take MECH 6090 for less than three terms;
- Complete NANO 6010 Advanced Topic in Nano Science and Technology for one term. Students can use NANO 6010 to replace one term of registration of MECH 6090;
- Register in MECH 6990 MPhil Thesis Research every regular term;
- Conduct research in nano area; and
- Present and oral defend the MPhil thesis.

Energy Technology Concentration

Students who opt for the Energy Technology Concentration are required to:

- Take 12 credits of postgraduate courses (excluding courses from SBM and SHSS) of which 6 credits must be from MECH courses and 3 credits from ENEG courses;
- 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;
- Take LANG 5001 Postgraduate English for Engineering Research Studies. Students can be exempted from taking LANG 5001 with the approval of the Department Head and PG Coordinator;
- The credits earned from ENGG 6770 and LANG 5001 cannot be counted toward the credit requirements;
- Take MECH 6090 Seminar in Mechanical Engineering for at least three terms. Subject to the approval of the Department, students can take MECH 6090 for less than three terms;
- Complete ENEG 6010 Advanced Topics in Energy Technology for one term. They can use ENEG 6010 to replace one term of registration of MECH 6090;
- Register in MECH 6990 MPhil Thesis Research every regular term;
- Conduct research in energy area; and
- Present and oral defend the MPhil thesis.

Curriculum for Doctor of Philosophy (PhD) Program in Mechanical Engineering

Students enrolled in the Doctor of Philosophy (PhD) program in Mechanical Engineering are required to:

- Fulfill credit requirements as follows:
 - i) PhD (MECH) students without a master's degree are required to take 24 credits of postgraduate courses (excluding courses from SBM and SHSS), of which 18 credits must be from MECH courses.
 - ii) PhD (MECH) students with a master's degree are required to take 12 credits of postgraduate courses (excluding courses from SBM and SHSS), of which 9 credits must be from MECH courses.
 - iii) Students deemed to be missing relevant background in Mechanical Engineering may be required to take extra MECH courses, which will be specified by the departmental Admissions Committee.
 - iv) HKUST MPhil (MECH) graduates may be granted credit transfer of up to 12 credits on condition that these credits have not been used in their MPhil (MECH) degree or any other academic qualification. Subject to the approval of the departmental PG Committee, students who obtained master's degree from other universities may be granted credit transfer of up to 6 credits on condition that these credits have not been used to earn another academic qualification, and that the courses must be at 4000-level or above.
 - v) In addition, students must fulfill the school requirements on PhD programs stipulated in the section of *School of Engineering*.
- Take and pass ENGG 6770 Professional Development in Engineering and MECH 6770 Professional Development in Mechanical 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 MECH 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 approval, part-time students may be given extension to complete the courses. HKUST MPhil (MECH) 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.
- Take LANG 5001 Postgraduate English for Engineering Research Studies. Students can be exempted from taking LANG 5001 with the agreement of the Department Head and PG Coordinator;
- The credits earned from ENGG 6770, MECH 6770 and LANG 5001 cannot be counted toward the credit requirements;
- Pass an oral qualifying examination (QE) which can be attempted twice at most.
 - i) All PhD students admitted with only a bachelor's degree should attempt

the first QE within the first four regular terms of study, or if failed, the second QE within the fifth regular term of study.

- ii) PhD students admitted with a master's degree should attempt the first QE within the first three regular terms of study, or if failed, the second QE within the fourth regular term of study.
 - iii) A student who fails the second attempt of QE is not allowed to continue with the PhD study. Subject to approval, he/she may be recommended for transfer to the MPhil program.
- Take MECH 6090 Seminar in Mechanical Engineering for at least four terms. Subject to Department's approval, students can take MECH 6090 for less than four terms;
 - Register in MECH 7990 Doctoral Thesis Research every regular term; and
 - Present and oral defend the PhD thesis.

Nanotechnology Concentration

Students who opt for the Nanotechnology concentration are required to:

- Fulfill credit requirements as follows:
 - i) PhD (MECH) students without a master's degree are required to take 24 credits of postgraduate courses (excluding courses from SBM and SHSS), of which 12 credits must be from MECH courses, 3 credits from NANO courses and 3 credits from NANO/MECH courses.
 - ii) PhD (MECH) students with a master's degree are required to take 12 credits of postgraduate courses (excluding courses from SBM and SHSS), of which 6 credits must be from MECH courses and 3 credits from NANO courses.
 - iii) Students deemed to be missing relevant background in Mechanical Engineering may be required to take extra MECH courses, which will be specified by the departmental Admissions Committee.
 - iv) HKUST MPhil (MECH) graduates may be granted credit transfer of up to 12 credits on condition that these credits have not been used in their MPhil (MECH) degree or any other academic qualification. Subject to the approval of the departmental PG Committee, students with other master's degree may be granted credit transfer of up to 6 credits on condition that these credits have not been used to earn another academic qualification, and that the courses must be at 4000-level or above.
 - v) In addition, students must fulfill the school requirements on PhD programs stipulated in the section of *School of Engineering*.
- Take and pass ENGG 6770 Professional Development in Engineering and MECH 6770 Professional Development in Mechanical 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 MECH 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 approval, part-time students may be given extension to complete the courses. HKUST MPhil (MECH) 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.

- Take LANG 5001 Postgraduate English for Engineering Research Studies. Students can be exempted from taking LANG 5001 with the agreement of the Department Head and PG Coordinator;
- The credits earned from ENGG 6770, MECH 6770 and LANG 5001 cannot be counted toward the credit requirements;
- Pass an oral qualifying examination (QE) which can be attempted twice at most (with details as specified above);
- Take MECH 6090 Seminar in Mechanical Engineering for at least four terms. Subject to Department's approval, students can take MECH 6090 for less than four terms;
- Complete NANO 6010 Advanced Topics in Nano Science and Technology for one term. Students can use NANO 6010 to replace one term of registration of MECH 6090;
- Register in MECH 7990 Doctoral Thesis Research every regular term;
- Conduct research in nano area; and
- Present and oral defend the PhD thesis.

Energy Technology Concentration

Students who opt for the Energy concentration are required to:

- Fulfill credit requirements as follows:
 - i) PhD (MECH) students without a master's degree are required to take 24 credits of postgraduate courses (excluding courses from SBM and SHSS), of which 12 credits must be from MECH courses, 3 credits from ENEG courses and 3 credits from ENEG/MECH courses.
 - ii) PhD (MECH) students with a master's degree are required to take 12 credits of postgraduate courses (excluding courses from SBM and SHSS), of which 6 credits must be from MECH courses and 3 credits from ENEG courses.
 - iii) Students deemed to be missing relevant background in Mechanical Engineering may be required to take extra MECH courses, which will be specified by the departmental Admissions Committee.
 - iv) HKUST MPhil (MECH) graduates may be granted credit transfer of up to 12 credits on condition that these credits have not been used in their MPhil (MECH) degree or any other academic qualification. Subject to

the approval of the departmental PG Committee, students who obtained master's degree from other universities may be granted credit transfer of up to 6 credits on condition that these credits have not been used to earn another academic qualification, and that the courses must be at 4000-level or above.

- v) In addition, students must fulfill the school requirements on PhD programs stipulated in the section of *School of Engineering*.
- Take and pass ENGG 6770 Professional Development in Engineering and MECH 6770 Professional Development in Mechanical 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 MECH 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 approval, part-time students may be given extension to complete the courses. HKUST MPhil (MECH) 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.
 - Take LANG 5001 Postgraduate English for Engineering Research Studies. Students can be exempted from taking LANG 5001 with the agreement of the Department Head and PG Coordinator;
 - The credits earned from ENGG 6770, MECH 6770 and LANG 5001 cannot be counted toward the credit requirements;
 - Pass an oral qualifying examination (QE) which can be attempted twice at most (with details as specified above);
 - Take MECH 6090 Seminar in Mechanical Engineering for at least four terms. Subject to Department's approval, students can take MECH 6090 for less than four terms;
 - Complete ENEG 6010 Advanced Topics in Energy Technology for one term. Students can use ENEG 6010 to replace one term of registration of MECH 6090;
 - Register in MECH 7990 Doctoral Thesis Research every regular term;
 - Conduct research in energy area; and
 - Present and oral defend the PhD thesis.