Catalog of Postgraduate Programs and Curricula

Curriculum for MPhil(MECH)
(For students admitted in 2010-11)

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

Credits

1. To take **12 credits** of PG courses, of which at least 6 credits must be from the following course list:

MECH	5010	*Foundation of Solid Mechanics*
MECH	5210	*Fluid Dynamics*
MECH	5230	*Computational Fluid Dynamics and Heat Transfer*
MECH	5320	*Convective Heat and Mass Transfer*
MECH	5410	*Advanced Mechanical Behavior of Materials*
MECH	5430	*Thermodynamics and Kinetics of Materials*
MECH	5520	*Theories and Practice of CAD/CAM/CAE*
MECH	5530	*Introduction to Nonlinear Control Systems*
MECH	5540	*Precision Engineering*
MECH	5930	*Finite Element Methods*
MECH	5950	*Introduction to Microsystems: Technology and Devices*

2. The remaining credits can be taken from any engineering or science courses at 5000-level or above.

Postgraduate Seminar

To take MECH 6090 *Seminar in Mechanical Engineering* for at least 3 terms.

Subject to Department's approval, students can take this seminar course for less than 3 terms.

Language Requirements

Students must complete LANG 5001 *Postgraduate English for Academic Purposes*.

(a) The 1 credit earned from LANG 5001 cannot be counted toward the credit requirements.

(b) Exemption from taking LANG 5001 may be granted by the Department Head and PG Coordinator.

Research and MPhil Thesis Examination

1. To conduct research and enroll in MECH 6990 *MPhil Thesis Research* every regular term; and

2. To defend the MPhil thesis successfully.

Concentration

Nanotechnology Concentration

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

- Take 1 NANO course;
- Complete NANO 6010 *Advanced Topics in Nano Science and Technology* for 1 term *(NANO 6010 can be used to replace 1 term of registration of MECH 6090)*; 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 1 ENEG course;
- Complete ENEG 6010 *Advanced Topics in Energy Technology* for 1 term. *(ENEG 6010 can be used to replace 1 term of registration of MECH 6090)*; and
- Conduct research in energy area.

Note: The total number of credit requirement remains the same as the students who do not opt for the Nanotechnology or Energy Technology concentration.