

**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 MPhil program in Mechanical Engineering are required to take 12 credits of PG courses (excluding LANG 501), of which at least two courses (6 credits) must be from the following course list:

MECH 501	Foundation of Solid Mechanics
MECH 521	Fluid Dynamics
MECH 523	Computational Fluid Dynamics and Heat Transfer
MECH 532	Convective Heat and Mass Transfer
MECH 541	Advanced Mechanical Behavior of Materials
MECH 543	Thermodynamics and Kinetics of Materials
MECH 552	Theories and Practice of CAD/CAM/CAE
MECH 553	Introduction to Nonlinear Control Systems
MECH 554	Precision Engineering
MECH 593	Finite Element Methods
MECH 595	Introduction of Microsystems: Technology and Devices

The remaining credits can be taken from any ENG/SCI courses at 500-level or above. Besides, students are required to:

- take MECH 609 for at least 3 semesters;
- take MECH 699 every semester.

Students must pass LANG 501 Postgraduate English for Academic Purposes (1 credit). Students can be exempted from taking LANG 501 with the agreement of the Department Head and the PG Coordinator. Subject to Department's approval, students can take MECH 609 for less than 3 semesters.

**Nanotechnology Concentration**

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

- take one NANO course;
- complete NANO 601 for one semester. They can use NANO 601 to replace one semester of registration of MECH 609;
- conduct research in nano area.

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

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

Students enrolled in the PhD program in Mechanical Engineering are required to fulfill the following:

- Students who possess a master's degree are required to take 12 credits of PG coursework (excluding LANG 501), of which at least two to three courses (a minimum of 6 credits) must be taken from the following course list, depending on the student's qualification and background upon entering the program and subject to the approval of the PG coordinator.
- Students who do not possess a master's degree are required to take 24 credits of PG coursework (excluding LANG 501), of which at least four courses (12 credits) must be taken from the following course list.

MECH 501	Foundation of Solid Mechanics
MECH 521	Fluid Dynamics
MECH 523	Computational Fluid Dynamics and Heat Transfer
MECH 532	Convective Heat and Mass Transfer
MECH 541	Advanced Mechanical Behavior of Materials
MECH 543	Thermodynamics and Kinetics of Materials
MECH 552	Theories and Practice of CAD/CAM/CAE
MECH 553	Introduction to Nonlinear Control Systems
MECH 554	Precision Engineering
MECH 593	Finite Element Methods
MECH 595	Introduction of Microsystems: Technology and Devices

The remaining credits can be taken from any ENG/SCI courses at 500-level or above. Besides, students are required to:

- pass an oral qualifying examination no later than the end of the third semester of study;
- take MECH 609 for at least 5 semesters;
- take MECH 799 every semester.

Students must pass LANG 501 Postgraduate English for Academic Purposes (1 credits). Students can be exempted from taking LANG 501 with the agreement of the Department Head and PG Coordinator. Subject to Department's approval, students can take MECH 609 for less than 5 semesters.

Nanotechnology Concentration

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

- take one NANO course;
- complete NANO 601 for one semester. They can use NANO 601 to replace one semester of registration of MECH 609;
- conduct research in nano area.

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