Master of Science (MSc) Program in Aeronautical Engineering

Program Director:

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The Master of Science (MSc) program in Aeronautical Engineering is offered by the School of Engineering of HKUST in partnership with Ecole Nationale de l'Aviation Civile (ENAC) in Toulouse, France. The program aims to provide students with exposure to various core aspects of aeronautical engineering, and how they are used in the real world. It will equip the capabilities of students seeking career in the aeronautical engineering profession, and enhance the knowledge of those already working in the sector.

Program Learning Outcomes

On successful completion of the program, graduates will be able to:

- Select and apply appropriate advanced mathematical and numerical methods to effectively address real world aeronautical engineering problems;
- Analyze and design complex mechanics, material/structure and/or control systems;
- Analyze existing aeronautical engineering problems in depth;
- Design and operate complex systems from a conceptual design perspective; and
- Carry out logistic management and quality control strategies for aviation related projects.

Admission Requirements

Applicants must possess a bachelor's degree in Aeronautical Engineering / Aerospace Engineering / Mechanical Engineering / Manufacturing Engineering / Engineering Management / Materials Science and Engineering / Electrical and Electronic Engineering / Civil Engineering / Environmental Engineering, or a related field, with second class honors or above, or an equivalent qualification from a recognized university or tertiary institution.

Program Duration

The normal duration for program completion is one year in full-time mode and two years in part-time mode.

Program Fee

The program fee is HK$135,000. New students admitted with credit transfer are also required to pay the full program fee. Students who take additional courses or need to retake any courses are required to pay additional fee.

Curriculum

Students are required to complete a total of 30 credits of coursework, including at least 12 credits of foundation courses and 6 credits of courses offered by ENAC. The remaining credits may be taken from any of the following courses.

Foundation Courses

AESF 5210	Fluid Dynamics
AESF 5310	Advanced Aerodynamics
AESF 5320	Advanced Aircraft Structures
AESF 5330	Advanced Aircraft Design
AESF 5340	Aircraft Flight Dynamics
AESF 5350	Aircraft Propulsion
AESF 5880	Materials Processing and Properties Engineering
AESF 5890	Statistics in Airworthiness, Maintenance and Reliability
AESF 6950	Aeronautical Independent Project
EEMT 5220	Six Sigma Quality Management

Elective Courses

AESF 5050	Fracture Behavior of Polymers
AESF 5311	Robotics: Mechanics and Control
AESF 5360	Advanced Flow Instability
AESF 5370	Composites and Nanocomposites
AESF 5380	Computational Fluid Dynamics
AESF 5390	Computational Aeroacoustics
AESF 5410	Advanced Mechanical Behavior of Materials
AESF 5930	Finite Element Methods
AESF 6910	Special Topics
EEMT 5120	Operation/Production Management

Courses offered by ENAC

AESF 5610	Air Transport System Overview
AESF 5620	Airplane Design Development and Operations
AESF 5630	Avionics Technology
AESF 5640	Air Traffic Management Overview
AESF 5650	Navigation Systems

The courses offered in a particular year will be announced to students prior to program commencement.

Subject to the approval of the Program Director, students may take a maximum of 9 credits of courses from outside the above lists.

Part-time students may take a maximum of 9 credits each term.

Credit Transfer

Credit transfer may be granted to students in recognition of studies completed successfully elsewhere. Application must be made to the program office within the first term after admission. All credit transfer must be approved by the Program Director and are subject to the normal university, school, and program requirement on credit transfer.

Graduation Requirements

Students must complete the program with a graduation grade average (GGA) of 2.850 or above as required of all postgraduate students at the University. Students failing to meet the GGA requirement are required to repeat or substitute the course(s) at a per-credit fee.