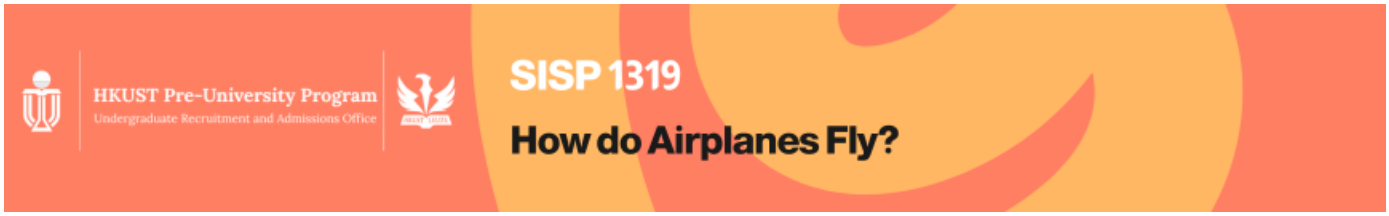

Course Description

This course focuses on the fundamental question of how airplanes fly by exploring the key principles of aerodynamics, propulsion, flight stability, and aircraft design. Through lectures and hands-on exercises, students will design, build, and test their own model aircraft, culminating in a final flight competition.

Topics

- Aerodynamics, propulsion, flight stability, and aircraft design

Grading Scheme

- Attendance of lectures and labs (25%)
- In-class exercises (25%)
- Group Project (50%)

  [Topics and grading schemes are subject to change as deemed appropriate. Students will receive information and guidelines in class on how they will be assessed for the course.]

Teaching Mode

The course will be delivered face-to-face.

Attendance Requirement

Attendance is expected and required. The minimum attendance required is 80%.

Instructor(s) Profile

Prof. Larry Li

Prof. Li is an Associate Professor in the Department of Mechanical and Aerospace Engineering at the Hong Kong University of Science and Technology (HKUST). He received his BASc and MASc in Mechanical Engineering from the University of British Columbia (Canada), where he was a Natural Sciences & Engineering Research Council Scholar in the Applied Fluid Mechanics Laboratory. He then went on to study for a PhD at the University of Cambridge (UK), where he was a Bill & Melinda Gates Scholar. After graduating, he stayed on at Cambridge as a Research Associate before joining HKUST in 2014. His research focuses on fluid mechanics, thermoacoustics and nonlinear dynamics, with applications ranging from aircraft propulsion to spray painting. He has investigated a variety of thermofluid phenomena, including global instabilities in open shear flows, non-Newtonian atomization in crossflows, and forced/mutual synchronization of thermoacoustic modes. His industrial experience includes time spent at Rolls-Royce (UK), LB Foster (Canada) and Coanda Research & Development (Canada).