COURSE DETAIL

FUNDAMENTALS OF AERONAUTICAL ENGINEERING
Country Hong Kong
Host Institution University of Hong Kong
Program(s) University of Hong Kong
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Engineering
UCEAP Course Number 118
UCEAP Course Suffix
UCEAP Official Title FUNDAMENTALS OF AERONAUTICAL ENGINEERING
UCEAP Transcript Title AERONAUTICAL ENG
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

Aviation is a rapidly expanding sector in developing economies like those in Asia. Aeronautical engineering is the foundation of aviation as a mode of transport. Together with space flight, aeronautics has been a driving force behind many of the modern technological development in the past century or so. This course aims to provide students with a solid foundation in the most important aspects of aircraft design and operation. The underlying science is common with many technological branches in general mechanical engineering, but it also has distinctive features that make aeronautics more challenging and interesting. For example, flow around aircraft is compressible with possible presence of shock waves while ordinary flows in engineering is low-speed and incompressible. The engine has similar thermodynamic cycles like that found in a gas turbine power plant but its main output is not derived from the turbine. Materials used in aircraft design must have the lowest possible weight for a given strength requirement. Specifically, the course will cover the following topics: aerodynamics and propulsion, materials and structures; safety and some aspects of operation and maintenance of aircrafts. Topics include: history of aeronautical science; wing aerodynamics; propulsion; flight mechanics; systems and airframe structures; fatigue-crack growth; crack monitoring; damage tolerance; metallic materials; composites; fibre-reinforced laminates; high-temperature alloys for turbines; creep damage.

Language(s) of Instruction
English

Host Institution Course Number
MECH3416

Host Institution Course Title
FUNDAMENTALS OF AERONAUTICAL ENGINEERING

Host Institution Course Details

Host Institution Campus

Host Institution Faculty
Host Institution Degree
Host Institution Department
Course Last Reviewed 2023-2024

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