COURSE DETAIL

AIRCRAFT STRUCTURAL ANALYSIS
Country Hong Kong
Host Institution Hong Kong University of Science and Technology (HKUST)
Program(s) Hong Kong University of Science and Technology
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mechanical Engineering Engineering
UCEAP Course Number 120
UCEAP Course Suffix
UCEAP Official Title AIRCRAFT STRUCTURAL ANALYSIS
UCEAP Transcript Title AIRCRAFT STRUCTURE
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

This course covers elasticity, structural analysis, energy and matrix methods, fatigue, vibration, airworthiness and aeroelasticity. It provides general information of aircraft structures and materials, and transfer of external aerodynamic loads into structural internal forces. The focus is to deliver the fundamental knowledge for stresses, deflection, and buckling analysis of these structural components under various static loading conditions including torsion, bending and shear. Lectures emphasize the fundamentals of structural mechanics and analytical approaches for analysis of aircraft structures. Students learn to derive the theory of linear elasticity and apply it to analyze the components subjected to typical aircraft loading conditions and design requirements. Tutorials provide a set of lessons and exercises teaching the concepts and methodology in analysis of aircraft structures. The students learn and understand the procedure of aircraft structural analysis from following tutorial problem solving exercises with group discussions.

Language(s) of Instruction
English

Host Institution Course Number
MECH3650

Host Institution Course Title
AIRCRAFT STRUCTURAL ANALYSIS

Host Institution Course Details
https://prog-crs.hkust.edu.hk/ugcourse/2025-26/search?keyword=MECH3650

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mechanical and Aerospace Engineering

Course Last Reviewed
2025-2026

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