The Hong Kong University of Science and Technology

[Course Title] **Mechanical Engineering for Modern Life**

[Course Code] **MECH 1906**

[No. of Credits] **3 Credits**

[Any pre-/co-requisites] **NO**

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Course Description

This course aims to provide students with a comprehensive introduction about the key sub – areas of Mechanical and Aerospace Engineering, preparing them for essential understanding of this field. This course is structured with four major modules which are *Aerospace Engineering*; *Mechanics and Materials*; *Thermo-fluids*; *Design and Manufacturing*. Each module focuses on a series of specific topics and incorporates application cases / demo kits which are carefully selected to engage students' involvement, enhance their understanding, and enrich students' learning experience.

By the end of this course, students should be able to understand the following:

Course Topics: 1. Introduction and Engineering Ethics;

Module I – Aerospace Engineering

2. Astronautics
3. Aeronautics
4. Aerodynamics (1)
5. Aerodynamics (2)
6. Propulsion systems (1)
7. Propulsion systems (2)

Module II – Materials and Mechanics

8. Statics and Dynamics
9. Solid Mechanics
10. Engineering Materials
11. Metals and Rare Earth Metals
12. Polymers

Module III – Design and Manufacturing

13. Controls
14. Engineering Design
15. Manufacturing
16. Mechanism of Machinery

Module IV – Thermo-Fluids

17. Thermodynamics
18. Heat and Heat Transfer
19. Fluid Mechanics (1)
20. Fluid Mechanics (2)
21. Energy and Energy Utilization

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
One survey	1%
Assignments	20%
Quizzes	24%
Final Exam	55%

More information about this course:

Required Texts and Materials

There is NO required standard textbook. This lecture notes of this course are prepared from a wide range of references, which are made available to students during lectures.