

MECH1906 Mechanical Engineering for Modern Life (Fall 21-22)

Course Code: MECH1906	Course Title: Mechanical Engineering for Modern Life		
Required Course Or Elective Course: Elective	Terms Offered (Credits): Fall (3 credits)		
Faculty In Charge: Prof. Huihe Qiu & Hong Tao	Pre/Co-Requisites: NA		
Course Structure: 2 classes (1.5 hours) per week			
Textbook/Required Material: Lecture notes based on wide range of references will be posted on Canvas before lectures			
Bulletin Course Description: This course aims to introduce the main core and elective courses of Mechanical and Aerospace Engineering to prepare the students for essential understanding of the study. This course is designed with four major modules which are <i>Aerospace Engineering; Mechanics and Materials; Thermofluids; Design and Manufacturing.</i>			
Course Topics: <ol style="list-style-type: none"> 1. Introduction 2. Engineering Ethics <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><i>Module I – Aerospace Engineering</i></p> <ol style="list-style-type: none"> 3. Aerospace Engineering 4. Aircraft Structure 5. Aerodynamics 6. Propulsion 7. Gas Turbine <p><i>Module III – Thermofluids</i></p> <ol style="list-style-type: none"> 13. Heat Transfer 14. Thermodynamics 15. Fluid Mechanics (1) 16. Fluid Mechanics (2) 17. Energy and Energy Utilization 18. Modern Buildings </td> <td style="width: 50%; vertical-align: top;"> <p><i>Module II – Materials and Mechanics</i></p> <ol style="list-style-type: none"> 8. Statics and Dynamics 9. Solid Mechanics 10. Engineering Materials 11. Metals 12. Polymers <p><i>Module IV – Design and Manufacturing</i></p> <ol style="list-style-type: none"> 19. Engineering Design 20. Manufacturing 21. MEMS 22. Mechanism of Machinery 23. Controls 24. Robots and Automation </td> </tr> </table>		<p><i>Module I – Aerospace Engineering</i></p> <ol style="list-style-type: none"> 3. Aerospace Engineering 4. Aircraft Structure 5. Aerodynamics 6. Propulsion 7. Gas Turbine <p><i>Module III – Thermofluids</i></p> <ol style="list-style-type: none"> 13. Heat Transfer 14. Thermodynamics 15. Fluid Mechanics (1) 16. Fluid Mechanics (2) 17. Energy and Energy Utilization 18. Modern Buildings 	<p><i>Module II – Materials and Mechanics</i></p> <ol style="list-style-type: none"> 8. Statics and Dynamics 9. Solid Mechanics 10. Engineering Materials 11. Metals 12. Polymers <p><i>Module IV – Design and Manufacturing</i></p> <ol style="list-style-type: none"> 19. Engineering Design 20. Manufacturing 21. MEMS 22. Mechanism of Machinery 23. Controls 24. Robots and Automation
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Course Objectives:	<ol style="list-style-type: none"> (1) General introduction of sub-disciplines in mechanical and aerospace engineering to year 1 students (2) Demonstration of impact of mechanical and aerospace engineering on modern life (3) Description of mechanical and aerospace engineering as a profession (4) Enrichment non-engineering students with fundamental knowledge in mechanical and aerospace engineering 		
Course Outcomes:	On successful completion of this course, students are expected to be able to:		

	<ul style="list-style-type: none">A. Understand the sub-disciplines in mechanical and aerospace engineeringB. Evaluate the social and philosophical impacts of the advancements of mechanical and aerospace engineering technologies on modern life
Assessment Tools:	Assignments / Quizzes – 20% Mid-term Exam – 35% Final Exam – 45%