前瞻中心					
課程名稱			**英文課名**		
無人載具飛行性能分析			The flight Performance Analysis of Unmanned Aerial Vehicle		
開課教授	**開課學制**	**全英語**	**是否為程式設計課程**	**時間**	**地點**
劉益仲	碩士	是	否	週五 18:00-2100	創新 105
備註（先修課程等等）	1.微積分(Calculus) 2.基礎力學(fundamental Mechanics) 3.流體力學(fluid Mechanics)				

課程大綱:

本課程透過理論講述與實際設計案例進行無人機飛行性能教學，內容包含無人機基本氣動力設計、起飛、爬升、巡航、航程與耐航、下降與降落等性能分析，培養學生具備飛行性能分析與任務規劃能力。

Course Content:

This course uses the theoretical methods and several practical design cases to teach the flight performance of unmanned aerial vehicle, including initial aerodynamic design, analysis of takeoff, climb, cruise, range, endurance, descent and landing. It can cultivate students with flight performance analyses and mission planning capabilities.

參考書籍: 1. General Aviation Aircraft Design Applied Methods and Procedures
2. Aircraft Design A Conceptual Approach

教學方式: 自製上課講義教學

週次	**課程內容**	
1	性能規格與任務參數	Initial sizing of constraint analysis and tradeoff studies
2	載具幾何外型簡介	Aircraft Conceptual Layout
3	翼剖面與機翼氣動力特性	The aerodynamic properties of airfoil and wing
4		
5	載具升/阻力氣動力參數分析	The aerodynamic of aircraft lift and drag analysis
6		
7	飛行性能介紹	The introduction of flight performance
8	性能分析-起飛	The flight performance - takeoff analysis
9	性能分析-爬升	The flight performance - climb capability
10	期中考	Midterm exam
11	性能分析-巡航	The flight performance - cruise analysis
12		

13		
14	性能分析-航程與滯空	The flight performance - range and endurance analysis
15		
16	性能分析-下降	The flight performance - descent analysis
17	性能分析-降落	The flight performance - landing analysis
18	期末報告	Final report