

# Syllabus

(Spring, 2008)

Subject	Aircraft Conceptual Design		Dep.	Mechanical & Aerospace Engineering	
Subject No.	446.341	Class No.	446.432	Credit	3
Prof.	Lee, DongHo	e-mail	donghlee@snu.ac.kr	Tel.	880-7386
Homepage	<a href="http://avdl.snu.ac.kr/">http://avdl.snu.ac.kr/</a> (Aerospace Vehicle Design Lab)				
Student	Senior		Presumed Subject	Aerodynamics	
Class Hours	Mon, Wed 14:30~15:45		Class Room	301-301	
T.A.	Kang, SeungOn (880-8051)		Office Hours	Mon, Wed 16:00~18:00	
Objective	Understanding the fundament of aircraft system design and practicing aircraft conceptual design.				
Outline of the Subject	<p>In this subject, as the first step, conceptual design of an aircraft which is compound of various details such as aerodynamics, propulsion, control, aircraft structure, and etc is dealt with. First of all, from the definition of conceptual configuration and mission, aircraft initial gross weight and size are set and wing and airfoil configuration are determined. Based on this information, thrust to weight ratio and wing loading is determined and engine, fuselage, wing and control surfaces sizings are performed. Finally, the specification of the determined aircraft converted to the drawings. In this process, flight stability and performance analysis is performed and using computational multi-disciplinary design optimization tool AAD, groups of two or three students accomplish special aircraft conceptual design term project.</p>				
Contribution of the subject to the major field	Systematic understanding of aircraft system. Arrangement of the related theory and training aircraft design human resources through the practice of designing complex aircraft system.				
Textbook & Reference	Textbook	Aircraft Conceptual Design (in Korean) (Committee of Aircraft Design Education, 2001)			
	Reference	Aircraft Design - A Conceptual Approach (D.P.Raymer, AIAA, 1999)			
Lecture Progress	Lecture of Textbook 40%, Introduction of Aircraft Development Materials 20%, Team Design Presentation 20%				
Evaluation	Team Design Report(60%), Mid-Exam(30%), Attendance(10%)				