

# Syllabus

Course	Aerodynamics		Department	Mechanical and Aerospace Engineering	
Professor	Soogab Lee	e-mail	solee@snu.ac.kr	Tel.	880-7384
Homepage	aancl.snu.ac.kr				
Learning Objectives	446. 323A is a course about aerodynamics, i.e, basic study of the flow of air about a body. Aerodynamics is concerned about forces and moments on flying body. Specific study of aerodynamics makes students analyze and design of application of aerodynamic problem				
Summary	<p>Students will be learned about</p> <ul style="list-style-type: none"> <li>- principle theory of flight by fluid mechanics and physics</li> <li>- physics about lifts and drags on airfoil or wing</li> <li>- 2 or 3 dimension flow characteristics on incompressible flow</li> <li>- design method of aircraft, rotary wing and wind turbine</li> </ul> <p>Main topics or concepts of aerodynamics are</p> <ul style="list-style-type: none"> <li>- Substantial derivative, Circulation, Vorticity</li> <li>- Bernoulli' equation, Potential flows</li> <li>- Kutta condition, Kelvin's circulation theorem</li> <li>- Non-lifting (source) and Lifting (vortex) Panel method / Thin airfoil theory</li> <li>- Downwash and Induced Drag in 3-D Wing / Prandtl's lifting-line theory</li> </ul>				
Importance & Application	<p>Student graduating from aerodynamics will be able to</p> <ul style="list-style-type: none"> <li>- understand the basics of flight theory of aircraft or rotary wings.</li> <li>- analyze and design the complicated machineries with wings</li> </ul>				
Text & Reference	Text	Fundamentals of Aerodynamics by J.D. Anderson, JR,			
	Reference	<ol style="list-style-type: none"> <li>1. Fundamentals of Aerodyanmics by Kuethe &amp; Chow</li> <li>2. Aerodynamics for Engineers by Bertin &amp; Smith</li> </ol>			
Lecture Organization	Lecture (70%), Design (10%), Discussion (20%)				
Evaluation	Assignment and Project (40%), Attendance(10%), Discussion (10%) Exam(40%),				