Course Number	M2795.002900	Lecture Number	001	Course Title (Subtitle)	Aircraft and Spacecraft Vibration	Credits	3
Instructor	Name	Ji-Hwan Kim	Position	Professor	Homepage	http://odyssey.snu.ac.kr	
	E-mail	jwhkim@snu.ac.kr			Tel.	+82-2-880-7383	
	Consult Time & Place	Tue,Thur : pm 2:00~3:15, Room: 301-303					
Prerequisites courses	Dynamics, Solid Mechanics						

* 1. Goals	Fundamental concept of aircraft structural analysis and design are introduced based on dynamics, solid mechanics and fluid mechanics. Generally, this lecture consist of three part such as single degree-of-freedom (1-DOF) model, multiple degrees of freedom(MDOF)model and infinite degrees of freedoms or continuous system models. And then, introduce the concept of 'Eigenvalue problem' for the analysis instead of using time domain analysis. Sample problems are introduced to understand the new concept and extend to handle the practical problems.
* 2. Texts and References	Inman, Engineering Vibrations.3rd.Edition

* 3. Evaluation	Attendance	Assignment	Mid-term	Final	Quiz	Class Partcipation	Others	Total
	10 %	15 %	20 %	20 %	20 %	10 %	5 %	100 %
	Remarks :							

* 4. Lecture Plan	Lecture Contents	
	Week	
	1	Introduction to Free Vibration, Harmonic Motion
	2	Viscous Damping, Modeling and Energy Methods, Stiffness
	3	Measurement, Design Considerations, Stability
	4	Harmonic Excitation of Undamped, Damped Systems, Base Excitations
	5	Rotating Unbalance, Alternative Representations, Damping
	6	Impulse Response Function, Response to an Arbitrary Input
	7	Shock Spectrum, Measurement via Transfer Functions
	8	Two-Degree-of Freedom Model
	9	Eigenvalues and Natural Frequencies, Modal Analysis
	10	More Than Two Degrees of Freedom
	11	Modal Analysis of the Forced Response
	12	Lagrange's Equations,String and Cable
	13	Vibration of Rods and Bars, Torsional Vibration,Beam Vibration
	14	Finite Element Methods
	15	Special Applications

5. Guideline for students	